Issue 99 • 29 September 1990 • 70p

NEW COMPUTER EXPRESS

GIANT 80 PAGE ISSUE WITH YOUR CHANCE TO WIN DRAGON FLIGHT

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

AMSTRAD KILLS 8-BIT

It's the end of the line for one of the classics in computing.

FULL DETAILS INSIDE

sinclair
128K
ZX Spectrum+3

THE BEST OF ART

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The top Amiga drawing program revealed

The power of speech

... SAVE AND THEN PRINT

How will we communicate with our computers in the future?

POPULAR COMPUTING WEEKLY

SEE CENTRE PAGES!

GAMES FRENZY!

THE EARLS COURT SHOW SAW A SWATHE OF NEW GAMES SOFTWARE HIT THE STREETS – CATCH OUR AMAZING REPORT ON PAGES 2 AND 3!

MS-DOS ON THE AMIGA? SURE! – SEE p. 15

LOOKING FOR POP?

Turn to page 2

THIS WEEK

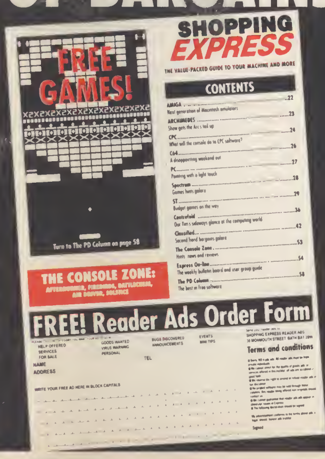
ARCHIMEDES
Is Desktop Office all the software you'll need?

PC
Amazing portable offers high resolution colour
Plus Working it out the Lotus way

ATARI
Now you can buy a turbocharged STE

AMIGA
Get your hands on a CDTV this Christmas
Plus The latest sampler

PLUS 40 PAGES OF BARGAINS


FREE GAMES!

Turn to The PD Column on page 58

SHOPPING EXPRESS

THE VALUE-PACKED GUIDE TO YOUR MACHINE AND MORE

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THE CONSOLE ZONE: AFTERBURNER, FIREBIRDS, BATTLECHESS, AIR DRIVER, SOLSTICE

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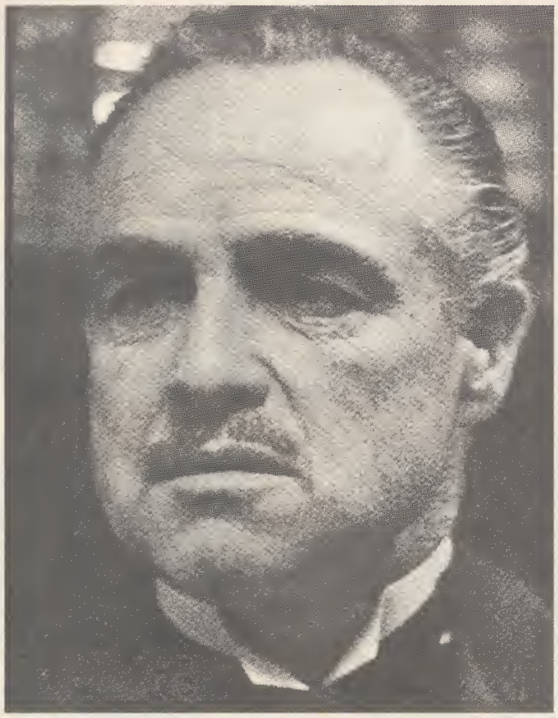
frontend

edited by Colin Campbell



Lots and lots of funerals

This man is not terribly pleasant. His hobbies include cutting off horses heads and hiding them in your bed. He gets his pals to sneak bombs under your car and will dare relatives to blow your head off in a restaurant for no apparent reason whatsoever. He goes to lots of funerals and weddings, makes people very tempting offers and does them big favours. He's what you might call an excellent bloke (unless you feel like being chucked into a mincer).

Soon you will be able to become a Godfather. US Gold has tied up the licence to all three of the gruesome films and will be releasing two games next year. One will be action based and the other will be a graphic adventure. No scenarios have been drawn up yet but hopefully the idea will to kill lots of people, try not to get killed yourself, and build a massive empire based on corruption, villainy and above all, violence. Or US Gold might wimp out and base the game on tracking down our heroic Mafia boss. ■

Ten stolen Chernobyl disks

In April 1986, the Soviet nuclear power plant at Chernobyl overloaded and exploded. Within five days a detectable cloud of radioactive dust had covered the entire globe.

In the 50 or so miles around Chernobyl, families are still suffering from the terrible effects of radiation.

Since 1986 the Minsk Radiology Institute has been gathering data on the health of 500,000 people who live in the area. The information is about as valuable as you can get.

Can you imagine then, how it is that the Institute kept all this data on ten 5.25-inch floppy disks – none of which were ever backed up? This was the question being asked when all ten disks went missing recently.

Helplessly the Institute offered a reward of 10,000 roubles (about £360) for the return of the disks, which had gone missing along with a valuable IBM compatible computer.

The disks have been returned, but much of the data appears to have been erased.

A team of computer experts have been employed to attempt a "last ditch stand" and recover some of the information.

Police in Byelorussiaare understood to have arrested a gng of teenage thieves.

The youths had hoped to make a lucrative profit from the PC, but had, for some reason, erased the set of disks. ■

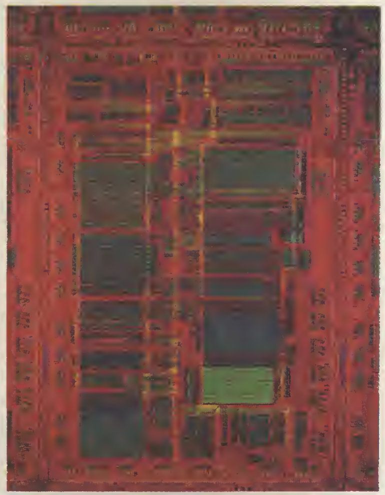
The programmers strike back

Last week we told you about Renegade, the bolshie new games software house which wants to change the way things are done.

Now the firm has laid down its manifesto. Try this: "Renegade is a games development company run by programmers, not by bureaucrats ... Renegade believes that the artist is an asset, not a disposable commodity ... Renegade believes that the software industry has been treated as the poor relation of the entertainments industry, by the people who are meant to be running it, for too long".

In last week's issue we asked if you wanted to see programmers being given more coverage and recognition for their work. So far it looks as if Renegade has gamers on its side, but keep those letters coming in... ■

Chip art



The computer chip has finally become a work of art.

In New York this week the first **'Information Art'** exhibition is to open with large scale computer generated diagrams of microchips the main attraction.

Intel has blown up its 486 processor to 5-feet – it usually measures about half an inch. ■

This man invented the first computer...

...and yet he died a sad, bitter and not terribly rich man. Charles Babbage decided in 1830 to build a mathematical machine capable of calculating numbers of up to 20 digits in one second. It was about a century ahead of its time.

Unfortunately the engineering process proved to be beyond Babbage. The number of levers and switches which had to work in unison were costly, and besides, Babbage kept improving his plans so much that work was constantly being scrapped or updated. The government pumped the equivalent of £250,000 into the project before pulling the plug.

Babbage was left with nothing but his plans. Ever since, mathematicians, engineers and historians have debated on whether Babbage's machine could have been the first working computer.

Now they'll find out. The Science Museum in London is to build Babbage's machine. The project team have been studying Babbage's paper dreams for some months now, and have decided to build the machine using 19th Century materials. They want to disprove the theory that Babbage failed because the technology wasn't ready. They reckon the technology was simply too expensive, and that fate was against the inventor. It will be completed next year – 200 years after Babbage's birth. ■

Pop slips quietly away

***Popular Computing Weekly*, the eight-year-old magazine for home computer users, has been closed down.**

The publication had documented the rise of low-cost computing throughout the 1980s and, in its heyday, boasted a massive circulation of over 50,000. That figure had dipped below 10,000 in recent months. Last March the magazine had been bought from Focus by Maxwell Consumer Magazines. Staff are to be moved to the small stable of sister publications operating in the computer market.

***Express* , now the only home computer weekly, has a circulation of 21.251.** ■

The Next best thing

A lower priced version of the NeXT 'machine for the Nineties' is expected to be launched this week.

Former Apple boss Steve Jobs will unveil three new models of the stylish computer, one of which will be a cut-down version of the original – which had a London launch last March. The other machines will be a top-end colour version and a diskless version.

All three come with 3.5-inch drives that can read MS-DOS files into the NeXT format. This gives the machine broader appeal to those nervous of its bold technical specifications.

The mono 'low cost' option will weigh in at about $5,000. Readers wondering why the thing is so expensive should bear in mind that the machine is a 25MHz 68040 with 8Mb of RAM, a 100Mb hard disk and a 2.44Mb floppy. It can manage data transfer at a rate of 32Mb per second and has an optional 256Mb optical disk. The new NeXT is already undercutting inferior workstations.

Steve Jobs, who is still something of an idealist, wants it to become the machine "for everyone". Knock it out for a ton Steve and we'll all be right there with you. ▩

Slip on the future

This is the Dataglove – it is the state-of-the-art in virtual reality and it's going to be in London next month.

At the Computer Graphics '90 Exhibition in Alexandra Palace Californian firm VPL will be showing visitors what VR is really all about.

With the glove you will be able to 'pick up' objects which are on computer screens. You'll be able to 'throw' the virtual objects through a computer environment. It will be possible to play something like tennis against a computer opponent using the proper physical movements rather than simple joystick waggling.

At the exhibition there will also be loads of brilliant graphics workstations doing the weirdest things. It runs from 6th to 8th of November and *Express* will definitely be there.

Cyber types really should call Ally Pally on 081-365 2121. ▩

• Check out the feature on the interfaces of the future on page 73

- The **London Underground** has installed a computer system in Green Park station which will improve safety by monitoring flow of travellers in every part of the station.
- **Seikosha** has slashed prices on its range of dot matrix and page printers by up to 26 per cent. The low cost SP2000, an 80 column, 9-pin, 200cps dot matrix is down from £269 to £199.
- The European Commission is to look into the operations of **IBM** UK which, it suspects, is putting out false information in an effort to secure higher sales. Some high level users allege that IBM is consistently breaking its own business codes.
- Excellent sound sampler **Mastersound** is to be updated for the ST. Mastersound 2 will include extra features for the STE and will cost £39.95. It'll be available by Guy Fawkes' Night.

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Talk to your computer
Keyboards are getting to look a teensy bit old fashioned, but what's the alternative? – page 73

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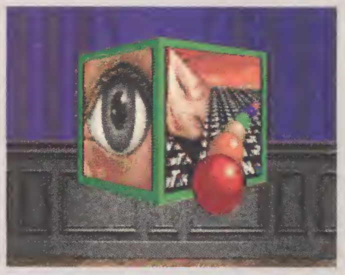

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The top Amiga art packages get the Express treatment – page 17

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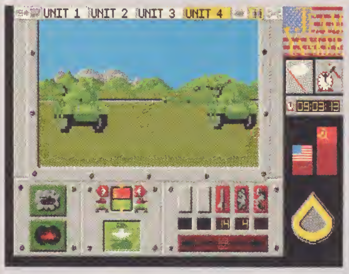
EVERY WEEK



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The Plus 3 story - why it was

In 1985 the computer industry went crazy because Alan Sugar, the rough and ready boss of Amstrad, bought the rights to Sinclair, Britain's leading home computer company, from the scientist and intellectual Sir Clive Sinclair. Industry purists were utterly horrified because Sugar had picked them up for a trifling £5 million.

The no-nonsense boys at Brentwood decided to stop messing around with leads and add-ons. A new Speccy was built with the tape loading device stuck on the end. The Spectrum Plus 2 would be a games machine aimed at the bottom end of the market. It cost little more than £100, software was soon to cost less than fiver, and it could be set up by someone who had never seen a computer before. It was, and is, an amazing success.

Amstrad was then launching machines based on the curious three inch disk (PCW and CPC). The company had access to loads of these floppies in the Far East, and the drives to go with them. The logical move would be to launch yet another Spectrum, this time aimed not only at slightly more sophisticated gamers but also the people for whom the original Spectrum was built in the first place – computer enthusiasts.

The Spectrum Plus 3 was launched with disk drive, attracted business software, comms packages a plenty and all manner of productivity and serious programs. It also attracted three distinct type of users – Speccy upgraders who did not want the tape based machine, first time 'educational' buyers who had heard that tapes were useless and that the Plus 3 could boast serious software and games players who wanted fast load machines.

Its best point was the hard keyboard, a change from the rubber keys of the original. But it always suffered from poor sound quality.

Since its launch the machine has always retailed at £199, and has been a moderate success, at least until the end of 1989 when its appeal appears to have ebbed.

Roll of honour

In a recent survey by the Plus 3 User Group, members voted *Tasword* (from Tasman) as the best program followed by the *Spectrum DTP Pack* from PCG and spreadsheet *TasCalc*.

The most popular game was reckoned to be Ocean's *Chase HQ*.

Pessimism from a publisher

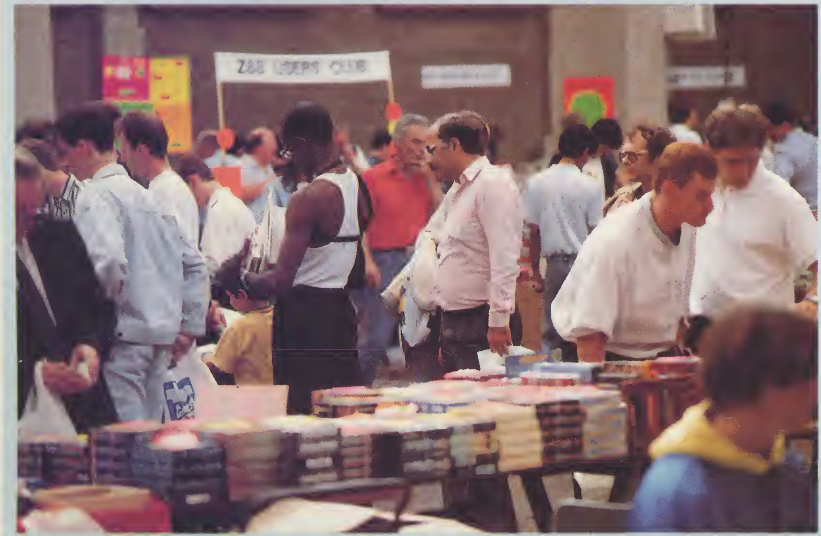
Barry Parkinson, boss of software house PCG, had sold thousands of copies of his *Spectrum DTP Pack* for the Plus 3. Last week he was in pessimistic mood. He told *Express*: "With this and the demise of Miles Gordon Technology (manufacturer of the SAM Coupé) it doesn't look good at all. I would say this sounds the death knell for the Speccy. I think the disk-based machine has had its problems and now the Spectrum can only really survive as a games machine. I've seen a lot of people pull out of the Plus 3 market and sales of our program have dipped a lot recently.

"There was a time when you would see full page ads for Plus 3 programs but that's rare now. The Spectrum is out of date and this will be the end of it."

PCG can be contacted on 0229 836957.

Where to find a Plus 3

If you planned to buy a Plus 3, don't panic. There's no point in wandering around the High Street because Dixons *et al* have given up on the machine. But, as always, the box shifters can save the day. A useful tip is to go along to any one of the All Formats Computer Fairs. The next is scheduled for November 4th at the Royal Horticultural Halls in London. There will be eight stands selling the Plus 3 with prices as low as £130.



• All Formats Fair: the best place to look for a Plus 3 bargain.

The disk version of Sir Clive's old

THE SPECTR DIED THIS W

• Spectrum Plus 3: victim of the new decade, and of Amstrad's progression

Amstrad has stopped manufacturing its top of the range Sinclair Spectrum, the Plus 3. The disk-drive based machine is no longer available from mainstream stockists.

The firm's shock decision to scrap the three-year-old micro is based on the company's own perception of its 8-bit line-up. The Spectrum 'range' is now restricted to only one machine – the predominantly games based Spectrum Plus 2. Amstrad says it does not want buyers to face a decision between the smart new disk based CPC 6128 Plus and the old fashioned, but much cheaper 128K Speccy.

The Plus 3 had been manufactured in the Far East until the beginning of the summer. A decision by High Street retail chain Dixons to stop stocking the machine, added to Amstrad's growing fears of a clash with the new CPC, sealed the Plus 3's fate. No machines have been manufactured since the summer, although it has taken a few months for stocks to be pushed through the distribution and retail system.

Amstrad does not normally worry too much about the profile of its machine range, and still operates under Alan Sugar's 'if it sells, sell it' business doctrine. However, the Plus 3 was one of the few home computers which did not suffer from shortages last Christmas. Come January there were still plenty stuck in warehouses around the country.

Paradoxically, the tape based Spectrum Plus 2 is still a roaring success and Amstrad is understood to be planning a television advertising campaign for the machine this Christmas.

At the recent Computer Entertainment Show not one Plus 3 was to be found on Amstrad's large stand, despite the fact that Plus 3 games are still coming out on a regular basis.

Amstrad's spokesman Nick Hewer told *Express*: "We made the

> *'Users shouldn't panic. We only need worry if the Plus 2 gets the chop as well.' – Daniel Garner, chairman of the Plus 3 User Group*

e's old stalwart has had its chips

RUM PLUS 3 WEEK - WHY?

ZX Spectrum+3
128K
128K
FLOPPY DISC DRIVE

decision some months ago to stop the Spectrum Plus 3. We felt that the Plus 2 is doing a good job and that the new CPC range covered those aspects which the Plus 3 was known for."

He could not give any definite sales figures for any machines preferring to wait until the forthcoming announcements of Amstrad's 1990 financial performance.

And Amstrad's marketing manager Mike Walton told on-line news service Micronet that "the Spectrum Plus 3 is no more".

One major complaint against for the Plus 3 has been the price of software. Blank three-inch disks cost as much as £2 each while games come in at £14.95. Also, the Spectrum market relies heavily on budget games – but the price of three-inch disks mean there are none on that format.

The news was greeted pragmatically by the Plus 3 User Group. Chairman Daniel Garner commented: "It looks pretty bad at first, but the Plus 3 still has a lot to offer and I think we're going to be around for some time. It's sad that Amstrad is no longer committed to the machine, but my message to owners is not to panic. We only need worry if the Plus 2 gets the chop as well."

Garner estimates that some 15 per cent of Speccy users own the Plus 3. The theory is that many of the original Spectrum owners of the early 1980s upgraded to the serious Plus 3 without bothering with the Plus 2. Certainly, the machine carries a loyal following. Also, users are more likely to be interested in comms and serious software than users of any other 8-bit machine (with the possible exception of the SAM Coupé).

There are currently three popular bulletin boards which deal with Plus 3 affairs. Last week they were buzzing as furious or saddened owners had their say on the micro which lasted only three years but whic meant so much to them. ■

Spectrum owners buy an astonishing 180,000 machine specific magazines every month – more than any other home computer.

Consequences for the others

The disappearance of the Plus 3 directly affects two machines – the SAM Coupé and the CPC Plus.

It's not good news for the former. If a large corporation like Amstrad loses faith in a disk operated 8-bit based on Spectrum technology then things do not look good for those very small companies trying to sell another disk operated 8-bit based on the Spectrum.

The Coupé is prettier and better than the Plus 3, and it costs exactly the same. But manufacturer MGT crumbled because of the Coupé and its offshoot SAM Computers is desperately trying to rekindle some interest, without a great deal of success. It has even rechristened the machine 'Super Spectrum'.

The people behind MGT may take heart that a competitor has been removed but one suspects that the cons outweigh the pros.

The CPC Plus is a completely different story. Imagine you want a first computer. You go into a shop and there are two disk based options. You can buy a sexy looking CPC with monitor, or you can save more than £200, and live with a cheaper machine which plugs straight into the telly.

You can see why Amstrad pulled the Plus 3. The bottom line is that the company would rather you bought a CPC than a Spectrum.

So why wasn't the Spectrum Plus 2 pulled in favour of the CPC 464 Plus or even CPC console? Simple. To pull the Plus 2 would have been intolerable given its success.

Amstrad sees its future success as being only slightly less important than that of the CPC machines.

What's what software wise

Plus 3 owners who moan about the expense of disk software and look enviously toward the reams of cheap software for the Plus 2 would do well to get hold of Romantic Robot's Multiface gadget. It will copy tape software onto disk format and costs £44.95.

The Multiface has come in for a lot of stick in the past because it is possible for naughty pirates to start bunging out copies. But on the whole, users are genuine. So if you're worried about lack of software this could be a good investment. Romantic Robot is on 081-200 8870.

The Plus 3 also has a tape port so you could simply invest in a datacorder and plug it in. These cost about £15 and can be bought from just about any 8-bit stockist.

But games software houses are still largely committed to the Plus 3 and, although many will drop out over the coming year, you should still be guaranteed those games which are sure-fire hits or especially good games.

A dedicated user looks back

Daniel Garner, head of the Plus 3 User Group said: "It's really sad that Amstrad isn't staying with the Plus 3 because, even with its faults, it's a good machine. But to be honest there was a big stock-pile at the end of last year, the machine suffered a slump. The good thing is that Plus 3 users are dedicated and there's still a surprising amount of software coming out.

"Plus 3 owners go for quality. But we have to admit that, even though there's a long way to go, it's the beginning of the end for the Speccy. The machine looks outdated and I doubt if Amstrad will be looking to upgrade it in the same way as the CPC. You have to remember that this is the top of the range Spectrum that is being killed, not just one that sat uncomfortably in the middle."

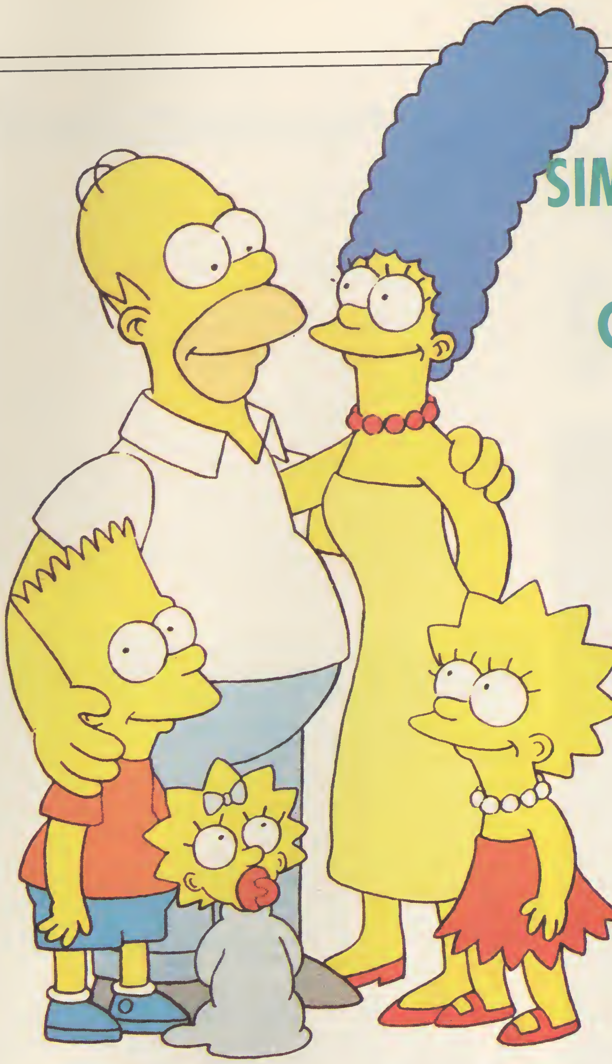
The user group has 500 members. If you are interested in joining call 0582 472067.

• Alan Sugar: never one to miss a good opportunity, or one to tolerate non-profit making kit. Remember the PC200? It was launched with great expectations, mercilessly slagged off by the press, ignored by the public and within one year, forgotten by Amstrad.

For more Spectrum news turn to page 28

NIBBLES

- *Battlescape Twinpack*, a compilation featuring the highly acclaimed battle sims *Borodino* and *Armada* is headlining the latest software broadside from ARC, Atari's software arm. Atari predicts that over 100 new software products will be released for the Atari ST before the end of the year, to add to an already comprehensive list of software available.
  As well as the above, releases include: *Cyber Assault, Badlands Pete, Nine Lives, Chronicles of Amiga* and *Gettysberg*.
- A new version of the anti Frodo virus program *Eliminator* was released last week by PC Security Ltd.
  It is designed to attack the latest and most destructive types of viruses in existence, the so-called Stealth viruses. These are hard to detect because of their ability to infiltrate stand alone PCs.
  The Frodo version is particularly destructive because a programming error prevents the usual irritating virus signals being displayed, thus users do not even realise they have been hit.
  Eliminator attacks viruses in memory, where they are vulnerable, enhancing its effectiveness. It also includes protection from Datacrime, which extends its usefulness further, and can be used on all IBM compatibles.
  Contact PC Security on 0628 890390.
- Sharp is slashing 20 per cent off the prices of its three main laptops. The PC-4602 and PC-4641, and the high performance 286 AT compatible battery laptop are important players in the laptop market with a significant market share. This means the entry-level model, the PC-4602, will now cost a mere £895, a drop of £200.
- New budget releases from Action 16 have just been announced.
  They include: *Backlash*, a desert shoot-'em-up with numerous deadly life forms to blow away; *Impact*, which has apparently over 80 screens; and *Eliminator*, a high speed shoot-'em-up that surprisingly involves destroying large numbers of aliens.
  All three games will retail at £4.99, and are available on the ST, Commodore and Amiga with *Impact* also out on the IBM PC.



THE SIMPSONS ARE COMING (oh no)

Are you sick of pretending that you know what this lot are all about? Do you tire of Sky dish owners cracking totally incomprehensible gags about eating your shorts?

Soon you'll be able to communicate with Simpson freaks by booting this unpleasant family into your computer. Nintendo based software publisher Acclaim is coming to the UK armed with loads of games, including *The Simpsons*. It is reckoned that the home computer versions will be scooped up by Ocean and that *The Simpsons* will be ready next year. ▨

THE JOYSTICK WHICH IS KIND TO YOUR WRISTS

• Contriver boss Adloflo Giannini reckons gamers using small movement joysticks are more likely to suffer from aching wrists and fingers. "With our stick the effect will be much less significant," he said. The SX1100 Challenger has an LED which lights up every time the fire button is pressed and auto-fire can be set to different speeds.

It costs £24.99 or £34.99 for an infra-red version. Call 0280 822803. ▨

MacShow

Apple and Claris have lent their not inconsiderable weight to what will be the most important UK event for corporate Apple users

Macworld Expo '91, which will take place in Birmingham next March, will feature the full range of Macintosh software and promises to be an exciting experience for all Mac Users. Contact Macworld Expo on 071-831 9252. ▨

1-2-3 is back again

Lotus 1-2-3, one of the most popular PC programs in the world, has been upgraded once again.

Version 3.1 of the spreadsheet was unveiled in Dublin last week. Lotus is playing heavily on a pretty and user-friendly new graphical environment. The program also boasts heavy duty analytic tools with several different ways of presenting spreadsheet calculations.

It retails at £475 but those *1-2-3* diehards who bought Version 3.0 before last May can upgrade for a mere £35. Those who bought the program after May 7th can have a free upgrade. Users of previous versions can upgrade for £140. ▨

Your chance to test o

WIN A COMM

Are you intrigued, excited and animated by the possibilities of interactive Compact Disc entertainment?

Are you open-minded and intelligent enough to make positive suggestions about this new form of computer entertainment?

Would you like to be one of the first owners of Commodore's Dynamic Total Vision system?

More to the point, would you like a free CDTV?

Express and Commodore have combined to offer a free CDTV system to the two readers whom we believe will be most able to help in the nationwide beta test of the system (as reported in *Express* 98).

Just before Christmas, Commodore will be releasing just 800 machines into British homes.

Take your pictures on CD!

Imagine taking holiday snaps onto CD format, going home, and running the results through your television set.

The Eastman Kodak company last week made this possible. It unveiled the Photo CD which will be compatible with Philips CD-I system as well as dedicated Photo CD players.

Basically, the camera will contain a gold coloured CD which will capture your snaps. It will be ready by 1992. Amazing! ▨

Taxman's logic

The British Inland Revenue has splashed out on some powerful new computers which will make sure we're all handing over the correct amount of money to Great Britain PLC. Curiously, the incredibly patriotic tax office has given the contract to a French company's Australian subsidiary.

Sydney-based Bull Australia will be manufacturing 1,700 3Com workstations for the taxmen over the next two years in a contract worth millions of pounds (your pounds). ▨

e to test out the Compact Disc Amiga before it is officially released next year

N A FREE CDTV AND BE A MMODORE BETA TESTER

They will be retailing at a £200-off price-point of £499. Buyers will be required to keep Commodore informed of bugs and annoying quirks in the new machine. They'll also be asked to make positive suggestions on how the hardware can be improved and what sort of software would best exploit the machine's capabilities.

Commodore wants to offer the CDTV to the broadest cross-section of the public as possible. And that includes people who understand what good computer entertainment is all about.

Commodore UK boss Steve Franklin said: "The CDTV is so important to us. We have to get it right. We don't want to do what other computer manufacturers do and just release the machine, then stumble through all the hitches. This is a mass market product and it has to be just right.

"If you buy a television and press the button you expect it to work. That's the way it's going to be with the CDTV."

The beta-test will last for three months. After that period, if all goes to plan, the machine will be launched proper for £699.

Franklin said that by November there will be 30 CD titles (not including current games converted to CD format). And that by the launch proper there will be nearly 100. Programs in the offing include a walk around various London museums such as the Victoria and Albert. There are interactive 'life and times' type programs on historical figures and artistic greats. There will also CDs based on sports, entertainment, science and nature.

Games will include *Trivial Pursuit*, a horror title called *Cult of the Severed Head* and a surprise game from Disney. There will also be a semi-educational program based on the Battle of Britain.

Commodore is keen to stress that the CDTV is not just another computer. The firm says that as a consumer electronics product is will rival the camcorder or even the Walkman.

One developer went as far as calling it "a small step for Commodore, but one giant leap for computing." ▪

- **See below right for details on how you could become a beta tester.**

• *CDTV: going of to beta testers this autumn.*

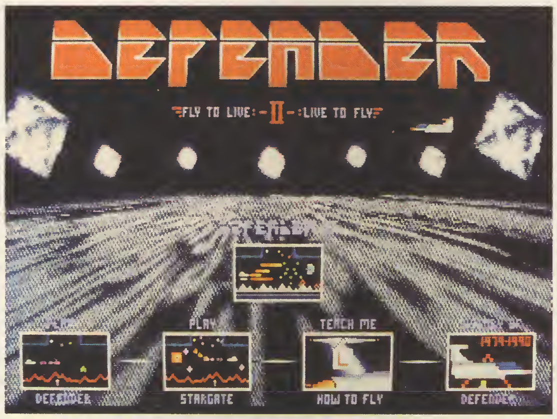
The ultimate 'kill-'em-all'?

"Of all the video games Defender *is perhaps the most thrilling, sinister and tortuous yet devised. It has the best colours, the best mythology, best visuals, the best noises. It is the ultimate test of guile, co-ordination and daring."*

So wrote best-selling novelist Martin Amis in the 1982 book *Invasion of the Space Invaders*. We can only hope the forthcoming sequel can live up to those recommendations.

It's coming out next month with versions for the ST and Amiga and if it features one third of the maddeningly addictive qualities of the original it'll be a winner.

It's based on the arcade game *Defender II*, and this time you get Fractal Smartlasers as well as the normal Smart Bombs and your craft is apparently better equipped for dealing with Landers, Bombers, Betas, Mutants and the other nasties. It's out next month from Arc Software for £19.95. ▪



• **Defender II:** ***arcade veterans' favourite.***

Now it's up to you...

We want you to prove that you are the right candidate for the job. To apply for the free CDTV simply fill in the form, cut it out, and send it to: Commodore CDTV Beta Testing, at the usual address.

If you don't want to cut up your magazine, jot the relevant details on a scrap of paper. Remember, we're not looking for wireheads or rabid games players. The winners need only have a sound understanding of what makes computing fun, for all members of the family.

Your answer to the question 'I should be a CDTV beta tester because...' must not be more than 30 words. Try to sell yourself, not the machine. Good luck.

Send to: COMMODORE CDTV BETA TESTING, New Computer Express, 30 Monmouth Street, Bath BA1 2BW

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Budgets from Budgie

Budgie UK licenceware has finally started life on the Amiga. The non-profit outfit has done great things on the ST, and it's now releasing its first three games for the Amiga.

These disks are simple games based on *Bomb Jack*, *Mr Dig* and *Tetris*. It is hoped other high quality PD programs will become available as more libraries join the scheme. Call 0702 612259. ▪

Learn with Amiga

As widely expected, Commodore has launched a new Amiga bundle which is designed to help youngsters get to grips with computing.

The First Steps pack features an A500 with 512K RAM expansion and a TV modulator. There are nine software titles in the pack including word processor *ProWrite* 2.5, Dr. T's *Music Mouse*, *Let's Spell At Home* from Soft Stuff, *Deluxe Paint II* and the *Deluxe Print* design package.

Commodore has included an introductory video and an instruction booklet. The whole pack costs £599. ▪

We're all going on a cyber holiday

If you've seen Arnold Schwarzenegger in *Total Recall* you'll already know about virtual holidays. Basically, you get plugged into a computer which completely takes over all your senses, and 'takes' you to any spot in the world, imaginary or otherwise.

The hardware consists of a glove which allows you to move around in the silicon world, and a set of goggles for viewing purposes.

Virtual holidays may be closer than many think. Speakers at the recent CyberArts conference in Los Angeles say they could be with us in less than five years.

One company, Sense8, has developed an interactive software tool which will allow programmers to create any virtual reality they fancy. Sense8's Tom Coull explained: "A travel agent should be able to have a computer connected to a pair of sunglasses with thick lenses, you just pop them right on. Several different hotels and resorts could be modeled and the travel agent could take you on a tour."

The software, called *WorldTool*, costs a hefty $6,000. But Coull sees it being used for more than just vacations. He reckons trainee doctors could practice on virtual patients. ■

Small gets big

Buyers of notebook PCs and lightweight portables are soon to be offered more data storage capacity – thanks to Toshiba.

The Japanese firm has developed a 43Mb hard disk which fits onto a 2.5-inch unit. Thus far manufacturers of small scale hard disks have been stuck on 40Mb.

Toshiba has incorporated 32-bit cache memory to speed up data transfer between the unit and the memory of a computer. The hard disk weighs only 180 grammes, but at present it costs a hefty £550. ■

Sanyo sends high-spec prices crashing

286 LAPTOP WAR HOTS UP

Another new contender in the 286 notebook/laptop race is the MBC17NB. Manufacturer Sanyo claims that this well specified VGA AT portable is the first to crack the £1,700 barrier.

Your £1,699 plus VAT will buy you a true AT compatible portable computer with a backlit VGA display and 1Mb of RAM with sockets for a further 4Mb. Storage is a high density 1.44Mb 3.5-inch floppy , 20Mb hard disk.

As well as operating from the mains the MBC can be run from its own rechargable battery pack.

Power can be handled economically by a shutdown facility that shuts the power hungry screen and hard drive down at a pre-determined time of between a minute and a couple of hours after keyboard activity ceases.

Globe trotters will be glad of a sensing device means the machine can be used on a variety of mains supplies. Battery charge time is claimed to be 60 minutes and the MBC has the normal serial/parallel and RGB video ports. More information from Sanyo on 0923 57246. ■

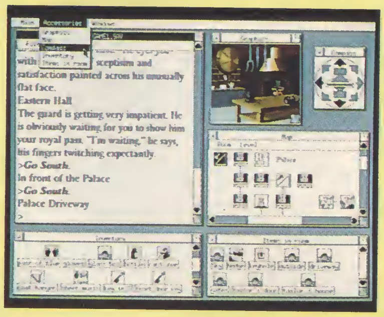
• *Sanyo: taking the low ground.*

Alice goes interactive

Virgin Games has unveiled the long awaited Magnetic Scrolls interactive adventure *Wonderland*, along with a line-up of games sure to challenge for the coveted Christmas top spot.

Based on the freaky Lewis Caroll novel *Alice In Wonderland*, the game features all the bizarre logic of the original, but only a small portion of Carroll's text has been included. Fans of Caroll can look forward to the Queen of Hearts' Palace and the royal croquet lawn. There's also a sherbet fountain, loads of puzzles, potions, keys and mystical characters.

The front-end requires minimum typing – it's mostly based on an ingenious multi-window, multi-tasking environment. It costs £34.99 on the PC and £29.99 on the ST and Amiga versions. All will be out before Christmas.



sceptism and
satisfaction painted across his unusually
flat face.
Eastern Hall
The guard is getting very impatient. He
is obviously waiting for you to show him
your royal pass. "I'm waiting," he says,
his fingers twitching expectantly.
>*Go South.*
In front of the Palace
>*Go South.*
Palace Driveway
>

• **Wonderland: *curiouser and curiouser.***

Other biggies include another 'wipe out the scum' extravaganza – this time called *New York Warriors*. This baby has more weapons than your average Saudi desert and it's a lot like those delightfully violent trash videos of the early '80s.

***Monty Python* has been received warmly by almost all reviewers and is worth checking out even if you find the humour just a tad public school.**

There are comic capers with *Judge Dredd*, driving 'thrills and spills' on *Super Off Road Racer*, and arcade hack and slash with the popular *Golden Axe*.

Strategy wise there is an inter-planetary domination game called *Supremacy*. Also, look out for an arcade compilation called *Edition One*. It features *Xenon*, *Gemini Wing*, *Double Dragon* and *Silkworm* and is out now on most major formats. ■

The Mac meets the console

An interface has been developed by Transfinite systems that will allow any Nintendo-compatible controller to be used as an input device for the Macintosh.

Known as the Gold Brick, it will help overcome the awkward limitations of the mouse. Most contemporary applications are designed for use with a mouse, yet it is an inappropriate tool for the development of 3D simulation or solid-modeling software.

Instead, Gold Brick will provide an interface between Nintendo game controllers and the Apple desktop bus; thus you will be able to handle screen objects with, for example, the Mattel Power Glove, priced at less than $100. Another popular controller is the Broderbund Uforce that offers 3D position sensing, while the Enteractive Roll and Rocker gives you tilt-sensing and the Power Pad reads the position of your feet.

Thus the net effect will be to make available a substantial range of ground-breaking home entertainment devices, at extremely low cost, that were previously inaccessible to Mac users.

The Gold Brick interface costs $195 (about £108), and the package includes a simple games controller and lots of information for the programmer. Contact Transfinite Systems on 0101 617 969 9570.

- **An Express guide to alternative man–machine interfaces starts on page 73.**

Found at last

The mystery of the MGT Lifetime Drive's seeming disappearance off the face of the earth has, apparently, now been solved. The MGT disk drives had featured multi-configuration, so it was always compatible with your computer, even when you went and bought a different model. But when MGT, makers of the SAM Coupé, went bust they were all seemingly lost.

Now however they have surfaced, in the hands of EEC, and a limited number are now available again.

Prices start at £89. Contact EEC on 0753 888866 for details. ■

Keep track of your ST

A tracker-ball has been launched for those ST owners looking for an alternative interface.

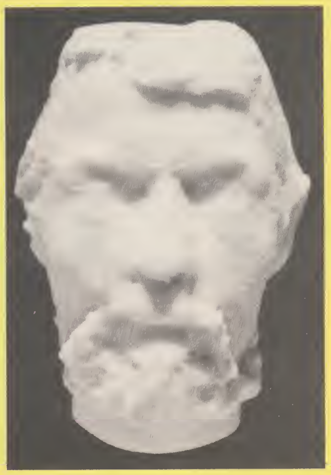
The Gasteiner Track Ball offers users a chance to operate the GEM environment when there is no flat surface for a mouse. It has the normal left and right buttons as well as a third, which acts as a lock so that icons and such can be dragged about the screen without the need to use two hands to hold a button and move the ball. It costs £39.95. Call 081-365 1151. ■

The bear necessities

Do you like teddy bears? If so then Database Software's promotional campaign for *Fun School 3* may strike a chord. Through in-store competitions across the country, youngsters can win *Fun School* teddies of their very own.

The ST, Amiga and C64 versions of *Fun School 3* are already out with PCW, PC, Spectrum and CPC versions set for release soon. ■

• ***Teddy boys: Database people get cuddlesome.***



Computer brings back face of England's past

This is the face of a man who has been dead for a thousand years which has been recreated by computer.

Archaeologists have taken the skull of a Viking fisherman and, using modern graphics techniques, have created what is claimed to be a faithful reproduction of the ancient man's features.

The project has been undertaken by the York Archaeological Trust working with London's University College Hospital. They used a Viking skull found four years ago in Fishergate. The man had probably been a fisherman, was well built and had died at about the age of 30.

The first job was to repair small amounts of damage to the skull's cranium and teeth. Then it was shipped down from York to London to be laser scanned onto a high definition PC. This resulted in an on-screen graphical representation of the skull featuring every tiny detail.

The 'skin' of a man's face "like a sheet of thin rubber" was stretched over the skull by a graphic artist. The image produced was that of the historic person.

The information gathered enabled a computer-controlled milling machine to sculpt a scale 3D model of the head from a block of hard foam. The completed head is to be placed in York's Jorvik Centre.

Dr Peter Addyman, director of York Archaeological Trust commented: "It's staggering to meet an almost thousand year old face like this – probably the first time a modern person has met the gaze of someone from the Viking age."

The Fishergate find included dozens of skeletons and more faces could be recreated. Addyman went on: "Now we can look forward to a whole street peopled with Viking age citizens whom we know would be recognised by their own friends and relations. It's amazing." ■

Software frenzy on Britain's biggest selling console

GO SEGA CRAZY

For the past few years Sega owners have been restricted to games coming only from Sega itself. The Japanese console manufacturer, like its great rival Nintendo, has always kept a firm grip on software activities.

But things are changing for the better as a spirit of glasnost sweeps through the console world. Sega has been appointing software publishers over the past few months who will be releasing their best games for the Master System and 16-bit Megadrive.

Already US Gold has been appointed, and that firm will be publishing greats such as *Gauntlet*, *Impossible Mission*, *Paperboy* and *Indiana Jones*. Now Mirrorsoft has also been tied up. Sega owners can look forward to shoot-'em-up classic *Xenon II*, the excellent *Speedball* and *Back To The Future II*.

Other firms to be tied up are Domark as well as Titus which will be releasing ultra-violent driving game *Fire and Forget II*. And Virgin, which distributes Sega's machines in the UK, has also been appointed as a third party publisher.

Amazingly, world renowned strategy game *Populous* is to be to be launched on the console. This will be published by Tecmagik which is devoting itself to Sega activities. Other games from that firm will include *Pacmania* and *Shadow of the Beast*. Unfortunately, you'll have to wait a year for those games.

In the next few months though there are 13 new games for the Sega as well as a 17 for the Megadrive including *World Cup Italia '90*, *Rambo III* and *Space Harrier II*. Sega owners won't have to worry about choice again.

- US Gold will be publishing all Sega coin-op licenses onto home computers following a deal struck between the Birmingham publisher and Sega Europe. The firm has already converted *Out Run* and *Thunderblade*. ■

For more on the Sega, turn to The Console Zone on page 53.

• Populous: *console action.*

Angels with dirty tricks

Enjoy wasting scumbags in underground stations? Of course you do, so indulge yourself in the latest orgy of violence at the safety of your own keyboard with *Guardian Angel*, the latest murderous release from Codemasters.

Here you are confronted by the usual range of beat-'em-up lambs to the slaughter: drug crazed hoods wielding flick-knives and baseball bats, vicious plague-rats, maniac fork-lift truck drivers, surly London Underground staff etc. And your mission? To wipe them out of course. Now there's a novelty.

Guardian Angel is on release now on 8-bit formats for £2.99 or 16-bit machines £6.99. ■

Games mad? GO TO PAGE 62

MP calls for anti-gas computers in the Gulf

State of the art military computers, which could help British forces in the Gulf prepare themselves for an Iraqi chemical attack, are being held back due to government cutbacks.

Computer-operated chemical cloud detectors, known as ZENBC, will give servicemen valuable extra time to don protective NBC suits that are impractical to wear for long periods in the desert.

But Labour MP Alan Rogers alleges government penny-pinching has prevented their early delivery to precisely those who need them most. "This order has not been brought forward because of severe financial constraints", he protested, adding that the hand-held ZENBC had already undergone successful trials with the army.

• King: could push anti-gas computers through.

Deliveries had been due to commence in 1992 from Leeds factory Zengrange.

Frank Murray, military sales director at Zengrange confirmed to trade magazine *Computing*: "The army has 21 of these devices at the moment, but the bulk order seems to have been pushed back for the moment, like most orders from the army."

In his letter to Tom King, the MP urged him to authorise the acceleration of delivery, and was confident the Defence Secretary would act soon. "If our troops are being denied vital equipment because of defence constraints then it is appalling," he said. ■

Job well done

Help is at hand for those who dread going to the doctor. Thanks to researchers at Tokyo, complete medical check-ups could soon become as routine as, say, going to the toilet. In fact this is precisely what it would involve.

British researchers have been taking a close look at a prototype of the "smart loo," which was unveiled at a medical symposium in Tokyo last week. It measures weight, body temperature and blood pressure, all in the privacy of you own toilet. An array of bio-sensory equipment to analyse urine content is still under development.

It will, apparently, include up to eight sensing elements on a microchip. Each element can be tuned to monitor a different substance, so that individual sensors will keep on the look-out for diabetes, kidney malfunction or various forms of cancer. Electrodes measure the oxygen consumed as enzymes present on each electrode react with various chemicals, indicating the presence of certain compounds.

Don't hold on though, the project is not likely to reach fruition for another four years. ■

Putting a good word in

Volkswriter has announced the release of a PC version of *Longman's Contemporary English Dictionary* for its *VolksWriter* word processor.

Longman's incorporates all the features crucial to language learning including full coverage of business terms, idiomatic English, slang and taboo words and phrases, even 'American' English.

The program costs £69 from Volkswriter on 0705 511679. ■

THE WEEK IN VIEW

In the hungover aftermath of the Earls Court CES, Clement Chambers, CRL's outspoken boss, picks up the pieces of the software industry...

It's a reflection of the state of the market," so they all said on the trade-day. Dingy, cramped, stuck in a corner, tatty, not up to much, were just some of the many negative opinions I heard from within the trade. Normally compulsively bullish software-hypesters rolled their eyes and muttered about 'what the software industry was coming to'. Had it all come to this, an Earls Court balcony with stands looking like rejects from a fun fair.

Then on the weekend the crowds appeared, packing the halls once more were clamouring punters, bags filled with anything not nailed down. Come Monday, the software houses were saying how hellishly busy it was, so was it the real picture?

When the public tightens its purse, the people who suffer most are the producers of non-essentials, like entertainment software. On a day-to-day basis fewer games are being bought because of the squeeze. As the saying should go; when the public sneezes, the software industry catches a cold.

But the software business competes with other non-essential businesses, like magazines, books and so on, so what the CES needs to do next year is to excite the public into buying throughout the year. The publishers must have products that can compete and win the fight for the people's cash against all comers, from Madonna to Spielberg.

It may not have been as big or as flashy as previous years, there may not have been anything particularly new and exciting for the trade. Perhaps no great deals were done. However, the public had flocked to see the computer entertainment industry. Ultimately, what more can the industry ask for? ■

• Clement Chambers: "fewer games are being sold".

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■ Privileged position

I'm writing to you about what appears to be a blatant misconception of the purpose of your magazine.

I am an IBM PC user, by virtue of ownership, but I keep up to date with advances in the Archimedes, ST and Amiga world. I would think that would not be the only person to admit a general interest in advances of 16/32-bit computing across the board.

When I do buy a copy of *New Computer Express*, it is usually because I have read through other monthly computer publications and feel an urge to find out 'what is new' in the computer scene. Your magazine is in a very privileged position in this respect - being updated every week, you have a much lower 'dead time' between events or gossip occurring and publication. For example, when I last went up onto the CIX BBS to check the Chaos column, somebody had read *NCE* the day before and wrote about a review of *Vista*, a fractal rendering program for the Amiga and gave details of comparable software for the IBM PC.

Given that your magazine is such a good vehicle for swift documentation of the latest news, what I find objectionable is the stagnant nature of certain letters and reviews. It could genuinely be a case of bad sampling on my part, but every copy of *NCE* that I have bought contains a letter, or a review, which I would categorise as belonging to the 'ST versus Amiga war', or the 'My computer is better than yours' debate. As far as I am concerned, any letters or articles you print on this matter are a waste of your valuable magazine space.

The really annoying thing is that such reviews are often based on personal opinions and experiences, and are quite often factually incorrect. Why can't people accept the fact? The ST and Amiga are here to stay. The Amiga may currently sell in greater numbers, but the ST has been around for longer.

Go and tell whoever does the MIDI stuff for Fleetwood Mac that they can never use the ST for serious applications. Go and tell the same thing to the Amiga users at CalTech, who port programs from their Unix-based mainframes onto their Amigas at home.

My personal feeling about the handling of such matter in an open format computer magazine is that comparative reviews should be used more effectively. When someone gets their hands on *DPaint* for the ST, why not review it against its Amiga and PC cousins?

Something else I would like to see is letters of the type: 'I saw a program doing this on a XXX computer, and it made me think of how I could do this on my YYY computer."

To sum up, there's nothing 'Express' about 'my computer's better than yours'. Why not publish things that don't fill us all with a sense of deja vu?

Rajesh Jena, Gonville and Caius College, Cambridge

Some sound points there, Rajesh. Take a fiver by way of compensation for your effort.

And I reckon I'll take your advice about the 'my computer is better than yours' argument. Unless anyone comes up with a really cracking new angle on this old chestnut of a debate (which first raged seriously between owners of the C64 and the original rubber-keyed Spectrum).

So readers who want to contribute their five pee's worth to these pages are going to have to find something more constructive to write about. A fiver is on offer for the first sensible letter along the lines of 'I saw a program doing this on a XXX computer, and it made me think of how I could do this on my YYY computer'.

Meanwhile, my next correspondent is champing at the bit to ooze a spot of all-round niceness onto these pages...

H F-W

■ Friendly fellow

I have friends with Amigas, STs and PCs, but my main computers are a Commodore 128D and a C64, which I share with my wife who is just getting interested in computing. We also have extra disk drives, a Sound Expander and Keyboard, modem, as well as Citizen 120D, CBM DPS1101 and Citizen DP560 printers, along with hundreds of tapes and disks. In fact, there is so much stuff that we have to use the spare room to put it in.

My friends possess their 16-bit computers, some software and that's about it. They only have games and a word processor - but no printers. My wife and I, on the other hand, can do letters, play music and games, communicate down the phone line and generally enjoy the use of our computers. My friends just play games.

But I don't slag them off. And they have complimented us on our set up. We can do most things with our 'obsolete 8-bits', while they can only play games. This obviously makes our 128D and 64 better?

Certainly not. Our set-up has been built up over the years and is perfectly adequate for our needs, so why should we spend a fortune just to 'keep up' with the 16 bitters? No, mine can do more than theirs can at the moment, but I am more than happy to co-exist with any other computer owner as long as they share my interest in computing in general.

Chris Smith, Hatton, Derbyshire

Which proves my point that it's not what you've got in the way of computer power, it's what you do with it that counts. Glad to hear that you and your wife have so much fun with your trusty 8-bit kit Chris.

Now had you sent me an interesting photograph of the kind of C64 system that wins compliments from an Amiga owner, I might just have sent you a fiver...

H F-W

■ The One-Eyed King?

Unfortunate though it may be, the vast majority of computer users and hence *NCE* readers are male. As approximately one in eight of them have problems seeing different colours, it isn't very sensible to print coloured text on top of coloured photographs.

However, printing black on black parts of the photo supporting the 'See what money DOS for you' article meant no one could possibly see what it did for the rather tired looking gent in the rest of the picture.

Using DTP, especially in colour, is no doubt the leading edge of technology, but it does have its dangers. Or was that a subtle way of pointing them out?

S Cohen, Newcastle upon Tyne

Anomalous trichromatism, as you so rightly say, is a remarkably common problem. Recognising this, our Publisher, he who would like to be obeyed, has decreed that there shall henceforth be no more of this clever cutting of text into pictures.

But it's not a DTP problem at all Mr Cohen - all that kind of clever colour work is done traditionally by a colour repro house, so at least the Mac and *XPress* are vindicated.

For those of you desperate to read that incomprehensible story, here it is again on the right in glorious, uncluttered monochrome...

H F-W

See what money DOS for you

He hardly cuts an outrageously impressive figure – but this is the richest man in the computer industry.

According to US super-business magazine *Fortune* Bill Gates, founder and boss of Microsoft, is worth an obscene $3.2 billion. That makes the man who came up with MS-DOS 33rd in the world league of billionaires. He's spending a trifling $10 million of his loot on an underground mansion with a 20-car garage and cinema.

■ Pre-emptive strike

I have just purchased a copy of *Express*, and this is my first reaction to your changes - they stink! Without warning, you have at a stroke dropped the only column that interested me and I have no doubt, many others: The SAM Coupé spot.

This reduces any interest I had in your magazine to half a page made up from two quarter pages: the Spectrum spot and the CPC spot.

I would also ask who we have to pay or sleep with to get a mention in your rag. I have sent a review copy and many free advert forms for the user groups I help to run - SDC Discovery Club and SAM Supplement, but have never seen either of

them mentioned or any of the adverts in the free advert section. I will not be buying *Express* again, and I am sure that a lot of other people will agree with me.
B Mumford, 57 St Saviours Road, West Croydon, Surrey CR20 2XE

Shame you rushed straight for your word processor Mr M - without having to sleep with anyone on the *Express* team you got a nice fulsome mention on these very pages last week. And if you did change your mind and buy a copy of Issue 97 you would have found a whole page devoted to the Spectrum and another whole page to the CPC machine.

Still, if you've stuck with your principles, you won't be reading this so any temptation on my part to send a fiver winging in your direction just faded away. Ho hum.

H F-W

■ Then again...

I think you should have a complete page in your magazine devoted to these 'my computer is better than yours' letters, as they quite often show how much or how little users know about their machines - often providing a good laugh as well as a good read. Each time I get hold of *Express*, it's one of the first things I look for, so I hope you keep them up.
Neil Chubbock, Taverham, Norwich

There's no accounting for taste, I suppose. One more on this subject, and I think we'll call it a day...

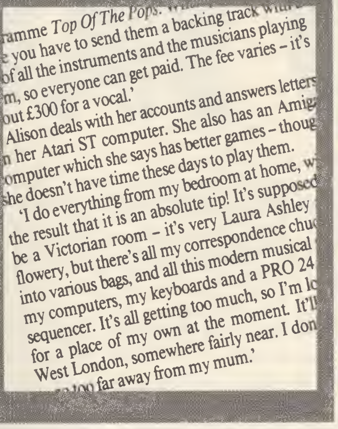
H F-W

■ Conclusive Boo?

Is this the final conclusive proof that we've all been waiting for in the 'My machine's better than your machine' debate? After all, if Betty Boo (real name Alison Clarkson) says so, it must be true!
Howard Glynn, Whitley Bay, Tyne and Wear

...and if I say the debate about bigger and better is now over, once and for all, it must be true! Mustn't it?

H F-W


amme *Top Of The Pops*.
you have to send them a backing track
of all the instruments and the musicians playing
m, so everyone can get paid. The fee varies – it's
out £300 for a vocal.'
Alison deals with her accounts and answers letters
n her Atari ST computer. She also has an Amig
omputer which she says has better games – thoug
he doesn't have time these days to play them.
'I do everything from my bedroom at home, w
the result that it is an absolute tip! It's supposed
be a Victorian room – it's very Laura Ashley
flowery, but there's all my correspondence chu
into various bags, and all this modern musical
my computers, my keyboards and a PRO 24
sequencer. It's all getting too much, so I'm lo
for a place of my own at the moment. It'll
West London, somewhere fairly near. I don
far away from my mum.'

• *Right: A clip from Plus magazine about the computers Betty (née Alison) prefers.*

■ Chainsaw kid

If you don't answer my question, I'm going to kill someone brutally with a chainsaw!

I'm having a never-ending argument with my parents about modems ever since I read an article in a magazine that said if it was a local call it would only cost 50p an hour to connect to a bulletin board during the cheap rate.

Parents being what parents are, they said it's a way of getting people to buy a modem and I shouldn't believe what they say in magazines. To put a stop to this, how much does it cost on cheap rate if you were on line for an hour?
Matt Green, Martham, Norfolk

Parents, being what parents are, are generally (and frequently very annoyingly) right Matt. A few simple sums reveal that a one hour local call at cheap rate will cost you 84p. (For all you lovers of hard sums out there, that's derived from the facts that there are 3,600 seconds in an hour, and for an off-peak local call, you get 240 seconds from Telecom for 5.6p inc VAT.)

Unless you subscribe to a Packet Switching Network, or access Micronet which can usually be achieved with a local phone call, the cost of one hour online is more likely to be £5.19, at the rate charged for long-distance calls.

Start using your modem for hour-long sessions at Peak Rate, however and the local BBS will cost you £3.30 an hour to access, while an hour on a board that's a long distance telephone call away will result in a whopping £10.83 being added to your parents' phone bill.

By the way, ten minutes with the latest Telecom charge structure table and a pocket calculator, reveals just how much dosh people make out of those 0898 numbers. A one-minute long distance call made at peak rate normally costs you a tiny fraction over 18 pee - as compared to the 44 pee a minute you're charged for calling an 0898 number. That's a comfy profit margin of 26p a minute, or around £15 per hour...

Now put that chainsaw down, Matt.

H F-W

■ Man with no brain

I am currently undertaking an Art A-level personal study project in which I have chosen to study animation on the Amiga. Although I have already familarised myself with *Sculpt-Animate 4D* and have some ideas for animation sequences, in order for my project to be acceptable I must first have studied work done by other animation artists on the Amiga.

Such distinguished work as *The Juggle, Newton's Cradle, The Busy Bee* and *The Run* spring to mind. But I need the addresses and names of where and who to write to, so I can ask them questions about their work - like what ideas the animation represents. I need only study one artist if their work is enough, and then produce some work of my own.

All I have ended up with are American addresses. Can you please help?
H van Wijk, Norwich.

No, not much.

If you're too stupid to put your name and address on your appeal for help with your homework, you can't expect me to bend over backwards to make your life easier. And I'm not about to publish the private addresses of Amiga animation artists on these pages.

If you write again, giving your full name and address you might get somewhere. But don't bother me - bother Brian Larkman who is the man who looks after the graphics pages in Amiga Format. Use the 30 Monmouth Street address that appears on these page.

H F-W

■ Man with brain?

I was not the least surprised to read that the Chancellor of the Exchequer, Mr John Major, uses a PCW. So do I.

What is more, I sold off my Amiga to buy it. I sold the Amiga on a Saturday, rang Kavin Computer Supplies on Monday morning and presto! a beautiful PCW9512 was delivered on Tuesday. Now why, in the name of the Good Lord, should a man claiming to be in possession of his brain do such a thing?

The answer, in fact, lies in one word: Locoscript. I have no interest in games nor in graphics and I found *Protext* fairly unfriendly. In *LocoScript,* the contents of a disk are immediately apparent - I found it tedious to ascertain such content in *Protext,* though I have read that many professionals prefer it to all others.

It is indeed a funny world. Thank you Locomotive, and thank you Kavin Computers. I am now a happy man.
L Bewnatt, Torquay

A very funny world indeed. Whatever were you doing with that Amiga in the first place? You hardly need a full colour display and multi-tasking capabilities if your main interest in computing life is a spot of word processing. Maybe you were a sad victim of a high-pressure salesman who needed to sell just one more Amiga that Saturday afternoon to win his all-expenses holiday in Barbados?

Shame you couldn't afford a Mac IIfx, really - *LocoScript* is nice and friendly if you like that sort of thing but compared to the power and facilities offered by *Word* 4.0.

Oh dear. I seem to have got embroiled in a 'my wordprocessor is better than yours' debate. I'd better go and have a little lie down until next week...

H F-W

MAIL SHORTS

■ Security scare?

...there may soon be a software/copyright security package hitting the market. It's a specially designed program that is placed on disk, cannot be wiped, and will not allow you to copy the program. You will appreciate that I cannot be too specific as it is still under development.
Denis Louth, Cowley

Yes, and pigs might fly! Anything that can be written to a floppy disk can be read and copied. No protection system can ever be completely secure. Anyone out there fancy pitching for a fiver by writing a letter that proves me wrong?

H F-W

■ Rude words I

Following on from your story about the Pet and Vic20 last week, I'd just like to let you know that the word 'Sega' can mean 'wanker' in Italian. I wonder if Virgin still use the 'Do me a favour, plug me in to a Sega' campaign out in Italy?
Martyn Allen, Shoeburyness

Apparently they don't - which is hardly surprising, really.

■ Rude words II

I'd just like to point out that all the people who argue about 8-bit versus 16-bit machines are plonkers. Here in France, the word 'bit' refers a part of the male anatomy - which you English call a plonker or willy.
Dominique Hulot, Paris

Well there's two more for my collection, and two more fivers in the post. Glad to see we have a strong international readership.

■ Fiscal sums

I was very dismayed to see that the price of *Express* had gone up until I read your editorial. Eighteen months ago we were paying 1.45p a page, NOW we are paying 0.92 a page. I was totally stunned at the value I'm now getting. Then, I realised that the price increase was the same in both Britain and Ireland, but the exchange rate makes it even better. Over here, I'm saving an extra 0.0142105 pence per page. You don't know how happy this has made me. I thank you from the bottom of my heart.
P O'Callaghan, Killybegs, Co Donegal

I can't resist the temptation to send you a UK Postal Order for £5.00. Now cash that, pal!

H F-W

TWO JACKS OF ALL

Integrated packages offer a bit of everything; a word processor, spreadsheet, database, comms, all in the same box. We tried two – Minerva's Desktop Office for the Arc and LotusWorks on the PC...

PC integrated packages (those handy bundles of word processor, spreadsheet, database and communications modules) tend to fall into two distinct camps. There are the 'corporate' examples which cost over £500, an area led by Lotus' *Symphony*, Informix's *SmartWare* and Ashton-Tate's *Framework*; then there are the budget packages typically aimed at the home or small business user. This latter group mostly hit the market in the year or so immediately following the launch of the Amstrad PC1512 in September 1986 (catering to the new breed of user who bought the machine), and are now looking, in many cases, decidedly old-fashioned.

Microsoft's *Works* is the exception. Always more modern than most of the competition, the current version 2 provides a very smart, easy-to-use system which is also pretty powerful. Partly because of this, and partly because it is being bundled with a lot of new computers, including now the IBM PS/1, it has acheived widespread success over the last year. Lotus, long-time leaders of the integrated market with *Symphony,* has seen its market share drop. In response to this, it has brought out a second integrated package which happens to cost the same as Microsoft's offering (£145 plus the dreaded VAT) and even has a similar name – *LotusWorks.*

Although dressed up in the corporate Lotus colours, with a rather elegant box and neatly printed manuals, this is actually a mildly-tweaked version of a product launched in 1986 called *AlphaWorks,* which Lotus Development bought lock, stock and barrel this June. Therefore, it is not surprising that once the program is actually loaded it doesn't look all that much like a conventional Lotus product, lacking the reasonably standard F-key menu structure, which typifies recent applications like *Magellan* and *Agenda.* Fans of *1-2-3* will no doubt be pleased to know however, that the menus can be invoked with the [/] key as well as by function keys, or a mouse if you have one.

A menu runs along the bottom of the screen for selecting the module you wish to use (which is invoked with the [F10] key other Lotus products use to mean 'quit'). This can be called up at any time and, assuming you have sufficient RAM, you can have up to 29 'windows' open at any one time, although only two can be on screen at once. The individual modules have their function keys listed along the top of the screen, pressing one produces a pull-down menu (with an elegant drop-shadow) providing the options. keyboard shortcuts can also be used for many functions.

WORD PROCESSOR

LotusWorks' 1986 heritage can be clearly seen in the word processor module, which is crippled by the segmented memory approach of the PC's 8086 processor (worked round by most modern programs) and offers a maximum document size of 64K. Several documents can be 'chained' together to print as one, but building big documents is something which really ought to be done by the program, not the user. The actual word processing is pretty basic, offering a bare minimum of formatting commands (bold, italic, and so on), and none of the font control which is necessary to support modern printers' facilities. Good points include a very sensitive search-and-replace feature, an adequate spelling-checker and a large, if somewhat idiosyncratic, thesaurus. Mail-merge with the database is supported and works fine, although it is pretty 'clunky'.

SPREADSHEET

As you'd expect from Lotus, the spreadsheet uses the *1-2-3* file format (Release 2.01's .WK1 format, in fact). It can support up to 8,192 rows and 255 columns – no 64K limits here – and supports 80-odd of the Lotus @ functions (which perform complex statistical and financial calculations). The interface looks very different to *1-2-3*'s, but actually uses similar keystrokes. It is sufficiently different to prove irritating to a *1-2-3* user however. The graphics offered are primitive, comparable with those in *1-2-3* release 1, and just as user-hostile to set up.

DATABASE

Just as the spreadsheet uses WK1 files, the database uses the industry-standard DBF files from Ashton-Tate's *dBASE III Plus*. Unusually, it also appears to use the *dBASE .NDX* index files too. Both form and table views of the database are supported, and records can be edited in either view. The actual size of the database is unlimited, although no record can have more than 128 fields, and each record is also restricted to 4,000 characters (except for memo fields, which hold up to 65,000 characters in *dBASE*-style NBT files). Each individual database can support up to seven indexes, which is impressive on a low-cost system. Files can also be linked, although this is not really a true relational system. All in all, the database is pretty impressive, if rather old-fashioned in feel. Alpha Software is best-known for database management software, so perhaps it is no surprise that the database module is pretty formidable.

COMMUNICATIONS

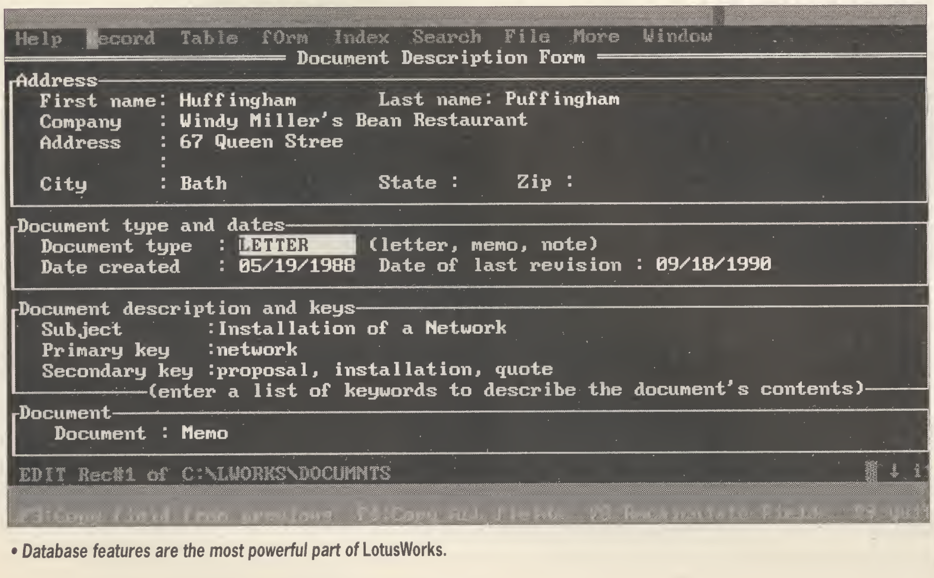
The typical communications system is about as user-friendly as a cornered rat. Those with *LotusWorks* are no exceptions. The problem is that you have to have a pretty good idea what you're doing before you start out – a fact of life with PC communications. For those who have the bug, *LotusWorks*' support of YModem and Kermit protocols as well as the more common XModem makes the module impressive, together with live data-capture facilies and even a scripting function. Most low-cost integrated packages have fairly primitive communications packages, but this is half-way to the level expected from dedicated software. In the end, this makes it rather less easy to use than some.

CONCLUSIONS

LotusWorks offers reasonably rich functionality in a rather old-fashioned package. Its real strength, compared to its competitors, is its database, which provides a great deal more power than most. The spreadsheet is also full of features although, like the database, it is not particularly elegantly implemented. The communications module can also do a lot. For 1990 however, the word processor is in a bit of a mess. In an increasingly presentation-aware society it is well out of step with the times. The lack of presentation control is also a restrictive factor in the other modules, with the spreadsheet's graphing options being risible, and the print formatting of the database is also somewhat limited.

In some ways it is more impressive than Microsofts' *Works*, certainly if data manipulation is your prime concern. But *Works* is far, far easier and a lot more pleasant to use than *LotusWorks*.

LotusWorks *costs £145 from Lotus on 0494 816667.*



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• *Database features are the most powerful part of* LotusWorks.

L TRADES ON TEST

D*esktop Office* (*DTO*) from Minerva is the first in a probable long line of integrated office applications for the Archimedes. It provides word processor, spreadsheet, database, presentation graphics and communications in much the same way as Computer Concepts' *Inter* series or Acorn's *Own View* family did for the Beeb.

DTO comes supplied on a single unprotected floppy, so there is no complicated installation procedure for hard disks and a working backup is easy to make, and indeed advised. Although there is only a single *DTO* application icon on the disk, double clicking it opens up a separate directory containing the five applications. These can then be loaded in the usual manner. Each application has been properly written to work under RISCOS and they all multi-task quite happily. The only obvious limitation is that each one can only work on one set of data at any time, e.g. it is not possible to have two documents loaded into *DTO Word* at once. But then again, how often do you really need to do this? The manual is a standard A5 ring-bound affair with 'thumb tags' marking the start of the main sections. After a few pages of contents and general introduction it gets straight on with a brief, but informative tutorial for the each of the five applications. A quick reference card and function key strip is also provided.

THE WORD PROCESSOR

DTOWord is a text-only, no frills word processor. As mentioned above, only one document can be loaded at once. There is no fancy spelling checker or WYSIWYG graphics. Many people might think this is a bit of a backwards step for the Arc, what with *Impression, Ovation* and the like. Well, in fact, it's more like a welcome relief! It does not use the outline fonts, so screen update after scrolling is dead quick and there are no complex menus with commands and features you'd never use. For the one shilling tour, *DTOWord* features all standard editing commands including block move, delete and copy, case swapping and find and replace strings. The latter has no wild card facility and some rather peculiar special cases like |T for tab and |R for newline - why not |I and |M like usual?

Text formatting is taken care of with embedded commands, rather like *Wordwise*, and indeed the similarity doesn't stop there. It only takes a few minutes to realise that the commands are in fact exactly the same as *Wordwise* and they are even highlighted in green! In fact, you can even directly load *Wordwise* files with no trouble. In addition to the standard commands such as margin settings and page lengths, you can extract the time and date from the system clock in numerous ways, read system variables and define printer control sequences - my favourite being the 'approximate' time format! During editing, both the displayed line and character spacing can be adjusted for easy reading and the actual size of the characters can be altered if you have difficulty reading. Documents can be previewed, again in a very similar manner to *Wordwise*, or printed via one of the RiscOS printer drivers or, of course, saved.

THE DATABASE

DTOBase. As you'd expect, *DTOBase* allows you to create, enter and edit 'cards' of information. These can then be browsed through, searched, sorted or printed in numerous ways. These cards are limited in physical size (up to 76 x 25) and number of fields (up to 32) but you are only restricted by disk space by the number of cards in a file. Creating cards is easy; text can be positioned anywhere on the card simply be moving the cursor and typing. Actual data fields are then added by using a menu command (there is even an icon on the toolbox window for speed).

Once a database has been built up, *DTOBase* provides a number of means of interrogation, ranging from a simple 'find this string' function up to setting up a wildcarded search on any number of fields. All interrogation is restricted to a simple match, you cannot, for example, ask for all people older than 18. Once found, cards are 'marked' for subsequent browsing or output. Output can be in two forms: card, where the whole card is output; or report, where only one line is used per card and only selected fields are output. Either form can be printed, spooled or saved in CSV format for transferring into other applications.

THE SPREADSHEET

DTOSheet. Perhaps the most cut down part of *DTO*, *DTOSheet* does only allows sheets up to 32 columns and 64 rows and has 14 mathematical functions! But, as already mentioned, how often do you really need much more? There are no scientific or accounting functions, but if you wanted a spreadsheet to deal with these, you should be using *Schema* or *PipeDream* anyway. *DTOSheet* does provide block moves and copies, updating cell references if necessary. Rows and columns can be added or deleted as required, but don't forget the 32 x 64 limit! A column and/or row can be 'held' i.e. constantly displayed at the side or top of the sheet so that the headings can still be used even when the sheet is scrolled. A simple find command is also provided for locating cells. As usual, cells can be be textual, numeric or contain a formula, they can also be locked against accidental editing. You can also control the display of negatives (brackets or minus), decimal places and the justification. A special money format is provided that prefixes a sign. Unfortunately this can change according to what country you have configured! Sheets can be saved, printed or exported either in plain ASCII format or in CSV for transferring to other applications.

The main downfall of *DTOSheet* is in the recalculation; only left-right or up-down methods are used, so entering B1*2 in cell A1 will always result in an error.

PRESENTATION GRAPHICS

DTOChart. As with *DTOSheet*, *DTOChart* is rather on the limited side, it only allows three sets of up to 20 data items to be plotted. But then as a means of presenting the output of *DTOSheet* this is not really a problem! Data can be entered by hand into a spreadsheet-like table, this includes the name of the value, the value itself, plus a colour and a HiLite flag. If set, this will emphasise this point when it is plotted. Alternatively, data can be imported in CSV form. As mentioned above both *DTOBase* and *DTOSheet* allow this. Once inputted, data can be plotted as a pie, scatter, line or bar chart. The last three allow one or all three datasets to be plotted, line graphs can be cumulative and bar charts can be stacked and/or given a 3D look.

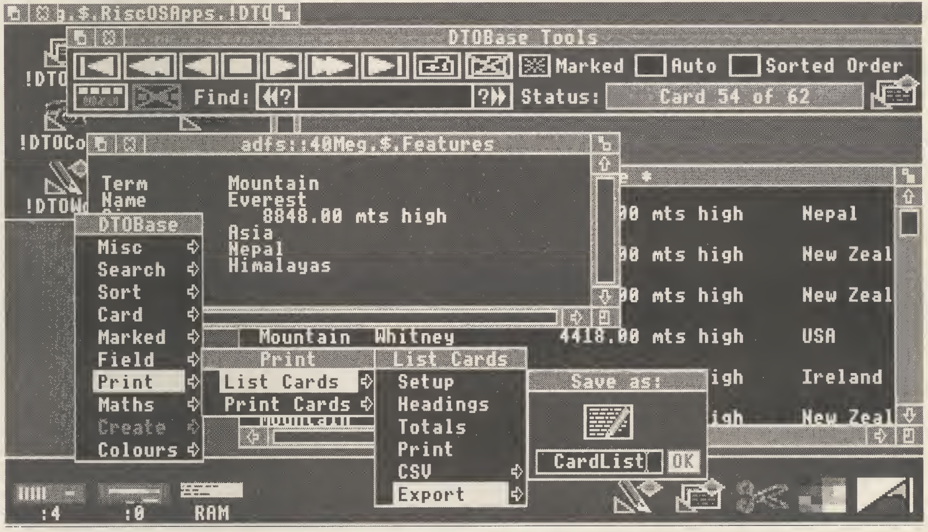
COMMUNICATIONS

DTOComms provides ANSI and TVI925 terminal emulation. File transfer is catered for by means of a 64K capture buffer and a very simple but effective 'drag and drop' method. Just drag the file from a directory viewer and drop it onto the *DTOComms* window.

CONCLUSION

The whole suite of programs has a number of nice features including setup files to configure the applictions to your own taste. All menu options have their keyboard short cuts shown making the manual almost redundant. The applications are rather on the large size and only a couple will load comfortably into a 1Mb machine at a time. The best application is without doubt *DTOWord* - it's the only one without any serious limitations. But of course the best bit is the price, for £130 *DTO* certainly offers value for money.

DTO costs £130 from Minerva on 0392 37756



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• The perils of multitasking: DTO can become confusing if you are not careful!

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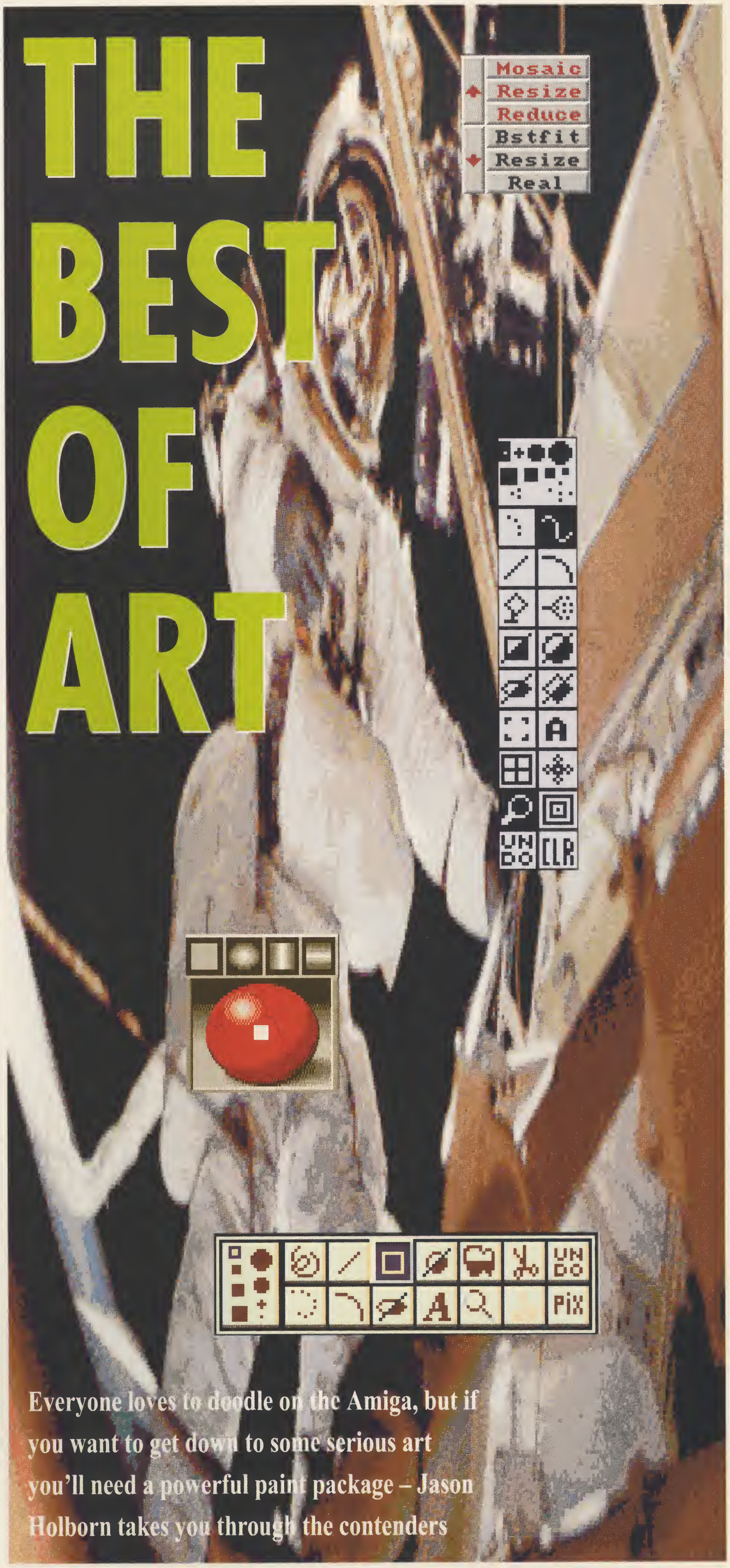
THE BEST OF ART



Everyone loves to doodle on the Amiga, but if you want to get down to some serious art you'll need a powerful paint package – Jason Holborn takes you through the contenders

If there's one area where the Amiga really excels, it has to be graphics; to put it bluntly they are superb and are often an important reason, if not the primary reason, for buying it. Even in the early days, developers were quick to catch on to these qualities. Indeed, despite Commodore's efforts to push the Amiga as a viable alternative to the drab range of PC compatibles, developers – who are a smart set – could see that the Amiga was destined for greater things.

One of the first packages to be developed for the Amiga was a paint package. Disregarding Commodore and Aegis' feeble efforts (*Graphicraft* and *Images* respectively), the package that really caught people's imagination was EA's *Deluxe Paint*. Originally developed as an in-house tool, Dan Silva's paint system laid the foundations for the current high quality of Amiga paint packages.

Looking back at *DPaint*, it seems so simple and even rather limited, but *DPaint* established the paint package as something more than just a plaything for idle moments. Indeed, Amiga paint packages have become so sophisticated that they often rival those found in systems costing tens of thousands of pounds.

DEFINING YOUR NEEDS

Choosing the paint package that is right for you certainly isn't a simple affair; a lot of your money and time may be involved in your search, not to mention the considerable annoyance involved if you choose unwisely. So before making your buying decision, it's important that you establish exactly what you intend using the package for. Most will probably want to just draw artwork from scratch, whereas others may need it to touch up existing artwork or perhaps even digitised images - either way your particular needs will dictate which package is good for you.

The first thing to decide is what screen modes you need to work in. If you're producing artwork for use within other packages then a good 32-colour package is what you're after. But if you're touching up digitised images, then a HAM paint system may be more your cup of tea. However, for producing original art, most art packages will do the job quite nicely (although a conventional 32-colour package can often do the job somewhat easier).

Some packages also offer limited image processing tools, which can be very handy if you're tidying up digitised images or converting images between one format and another. For example, you may wish to take a HAM digitised picture and edit it in 32 colours. For this, you're going to need a utility that will take the 4,096-colour HAM image and knock it down to a more managable five bitplanes.

WHICH PACKAGE FOR YOU?

With so many packages to choose from, it's no wonder that making the right decision can be so painful. To judge by magazine reviews one package stands miles above the rest – Electronic Arts' *Deluxe Paint* 3 has led the pack since its release. Others have tried to match it, but still *DPaint* holds the throne.

But *DPaint* isn't perfect. For starters, it doesn't provide any support whatsoever for HAM images. There are rumours, however, that the new release (version 4) will include support for HAM, which is sure to increase *DPaint's* strangle-hold over the paint packages market still further.

But what happens if you want to use HAM, but can't wait for *DPaint* 4? In this case, there is *Photon Paint* 2 – it may not be the fastest program in the world, but *Photon Paint* 2 gets the job done. *DigiPaint* 3 is another worthy alternative. And there is *Deluxe Photostudio* with its powerful image manipulation facilities. So which is best for you? Read the reviews on the next three pages to find out. ➤

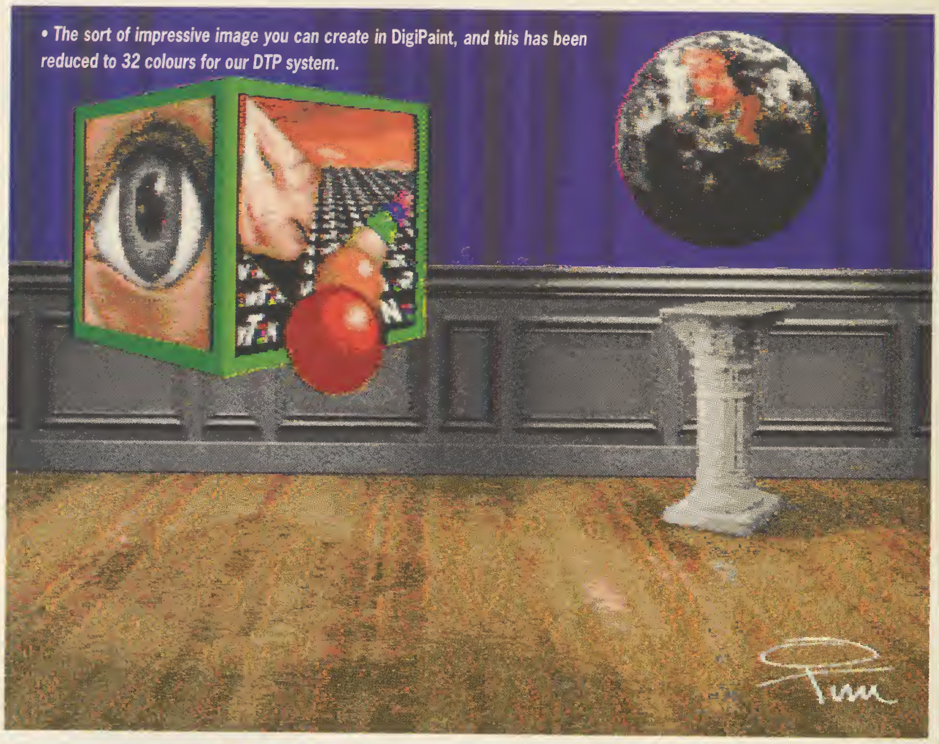
Digipaint 3

£69.95
Newtek/HB Marketing
0753 686000

NewTek has been producing graphic-related products longer than most of us care to mention, so it's a sure bet that it knows a thing or two about the Amiga. *DigiPaint* was designed to complement NewTek's acclaimed video digitiser system, *DigiView*, hence it is geared heavily towards the task of tidying up digitised artwork.

DigiPaint 3 is the follow up to NewTek's previous offering, *DigiPaint* 1. What happened to version 2? I hear you ask. Well, nobody actually seems to know, and NewTek doesn't like to talk about it anyway. Some claim that NewTek thought that *DigiPaint* was such a major enhancement over its predecessor, that it deserved to be called version 3. Hmm. Sounds rather dodgy to me.

Not only are NewTek products powerful, they also happen to be rather pretty. NewTek employed the services of a certain Jim Sachs – the well-known American Amiga artist who produced the graphics for Cinemaware's *Defender Of The Crown* – to design *DigiPaint* 3's user interface. As a result, *DigiPaint* 3 is one of the simplest to use paint packages you're likely to find.



• The sort of impressive image you can create in DigiPaint, and this has been reduced to 32 colours for our DTP system.

Once again, *DigiPaint* 3 is a HAM-only package. It supports both interlaced and non-interlaced screens, complete with full overscan. The arrival of version 3 of *DigiPaint* also brought with it support for super-bitmaps. These can be up to 1,024 by 1,024 pixels in size, but obviously you'll needs loads of RAM to be able to use them. This new mode also comes in particularly handy for editing the new Dyna-HiRes images such as those produced by the latest version of NewTek's *DigiView* video digitiser.

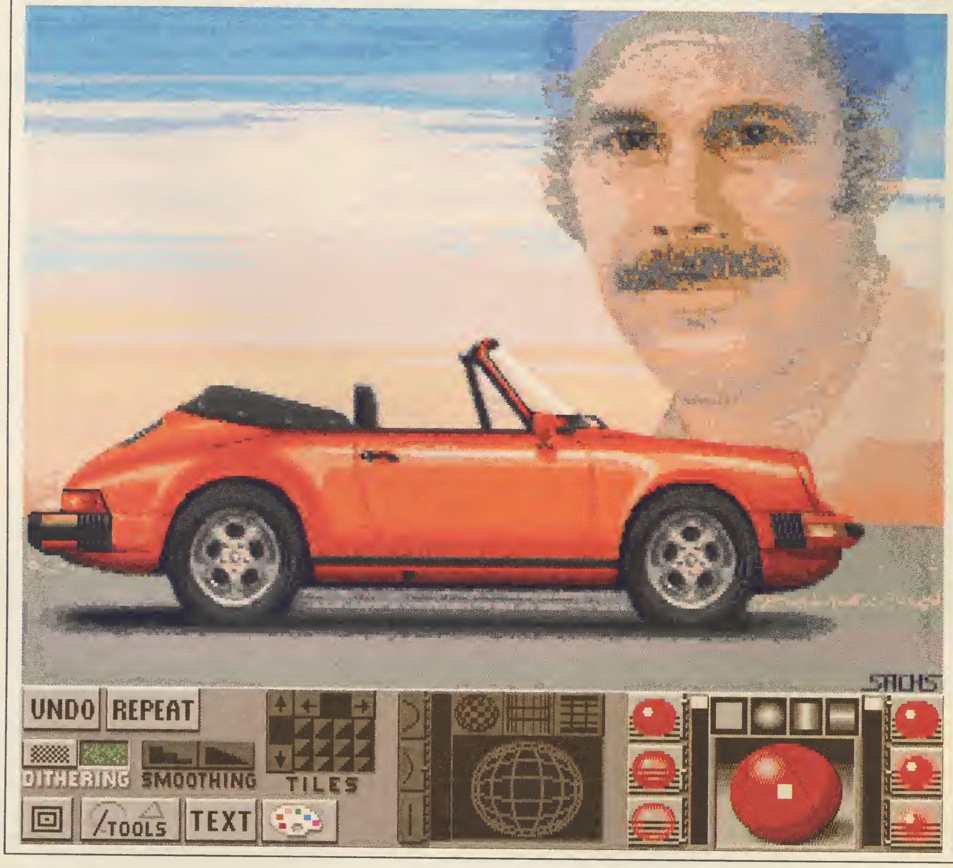
DigiPaint's specification list makes for impressive reading, but it's not until you start using *DigiPaint* that the faults become apparent. Most of the usual drawing tools are there, but there are also some glaring gaps – for starters, *DigiPaint* doesn't even have an airbrush tool, or a fill facility. I'm surprised that such a respected artist as old Jimmy Sachs let this one get through.

As if to counter *Photon Paint* 2's obvious strengths, *DigiPaint* also includes a multitude of powerful brush manipulation tools. As well as all the usual functions (which I've already described twice!), *DigiPaint* 3 includes several extra brush tools. *DigiPaint* 3 will let you wrap brushes on to preset 3D objects such as cubes, spheres etc. Generally, the results tend to be somewhat better quality than those produced by *Photon Paint*. Not only that, but *DigiPaint* rendered them considerably faster.

Also included with the *DigiPaint* package is a powerful image processing program called *Transfer24*. *Transfer24* is actually a cut-down version of NewTek's *DigiView* software minus the digitising options. The program allows you to convert images between resolutions, remap picture colours to specific palettes, control RGB levels, contrast, brightness, plus a whole lot more besides.

DigiPaint 3 is a blindingly fast system. Feature for feature it matches *Photon Paint* 2 very well, but it is rather let down by a distinct lack of basic painting tools. To exclude such basic and obvious tools as the airbrush is just preposterous – after all, what's the point in having all these fancy features if you can't carry out basic operations?

As it is *DigiPaint* 3 is damned good at touching up existing artwork, but somewhat lacking if you want to create artwork from scratch.



• Left: DigiPaint offers elaborate controls over mapping of images, allowing you to superimpose pictures onto existing three dimensional shapes.

NEWTEK
INCORPORATED

Deluxe Paint 3

£79.95
Electronic Arts
0753 46465

Surely every Amiga owner has heard of EA's now famous paint system. Since it's release way back in 1985, *Deluxe Paint* has gone from strength to strength. *DPaint* has since made its way across onto both the PC and now even the ST, confirming the package's importance within the graphics market. If you're after an industry standard, then *DPaint* is about as close as you'll get.

Version 1 of *DPaint* was a pretty simple affair, but EA enhanced it beyond belief in version 2. Many said it couldn't be bettered, but Dan Silva proved us all wrong with *DPaint* version 3 that offers what is generally believed to be the most complete paint system on a personal computer.

When you first boot up *DPaint*, the program allows you to choose the screen format to be used. The current version supports interlaced and non-interlaced low and high resolution screens with a choice of up to 64 colours in low resolution (using Extra-Halfbrite) and 16 colours in medium and high resolution. For video work, pictures can also be created with full overscan. Surprisingly, *DPaint* doesn't offer any form of support for HAM (Hold and Modify) painting, although rumours abound that this may be included within the next release.

The *DPaint* user interface is a joy to behold. Many of the more often used painting functions can be accessed from a vertical strip of icons along the right hand side of the screen. Each are accessed by clicking on them with the left mouse button, many also offer some form of customising which can be accessed by clicking on the same icon, but this time with the right mouse button.

Colour control is particularly well handled within *DPaint*. At the simplest level, you can set up the RGB values for each colour register in turn. However, *DPaint* also allows you to set up ranges of colours and even 'spreads' by simply defining the start and end colours. *DPaint* then generates the colours in between.

All the basic painting functions are there. You can draw freehand simply dragging the mouse pointer across the screen while holding down the left mouse button, draw both filled and outline boxes, circles, polygons, fill areas with solid colour and patterns, pick up areas of the screen and use them as brushes (or even fill patterns), plus a whole lot more besides.

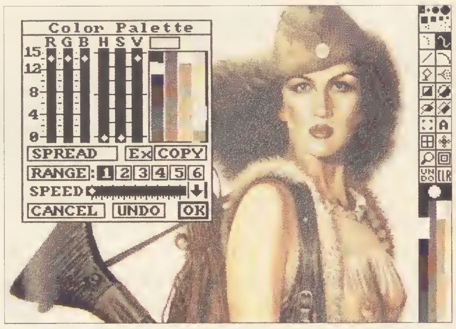
Brushes can be rotated, stretched, flipped and even manipulated in true 3D using *DPaint*'s powerful perspective facility. *DPaint* also offers more exotic painting tools such as blending, shading, smearing and colour cycling.

As well as the usual support for standard Amiga bitmapped fonts, *DPaint* version 3 also allows you to use colour fonts within your artwork. There are three included with the package, and additional fonts can be bought quite cheaply, making *DPaint* 3 ideal for desktop video applications.

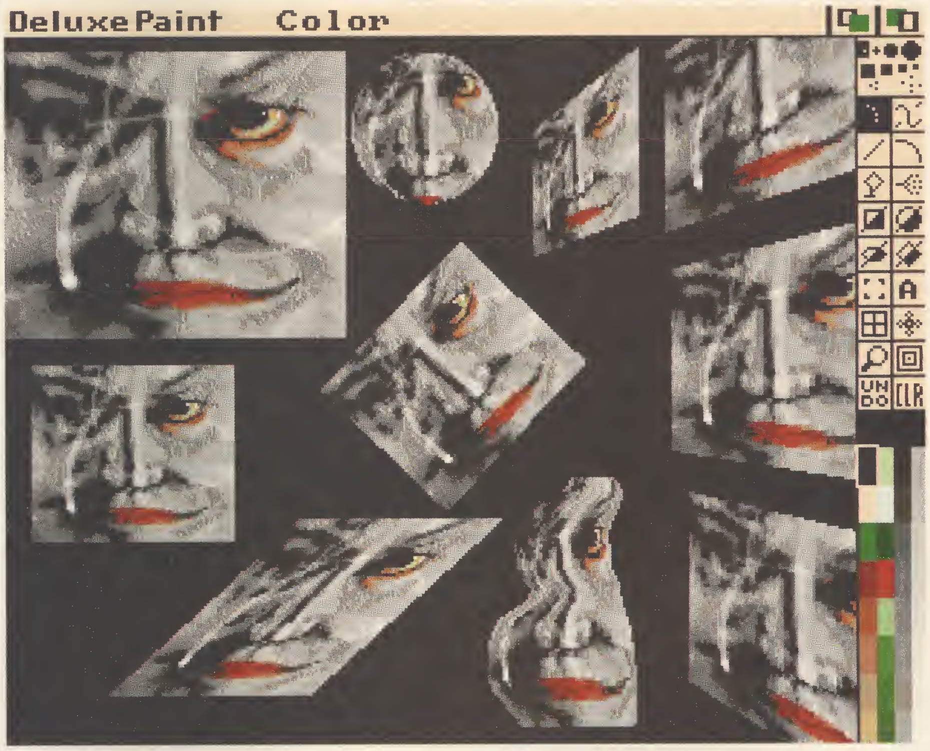
Also new within *DPaint* version 3 is its animation facilities. *DPaint* supports standard IFF ANIM format animation files, which means that you can use it to edit existing animations. But that's not all *DPaint* is good for – you can also build up your own animations by either drawing each frame in turn, or by using *DPaint*'s powerful anim-brushes and motion control requester. Effects such as spinning logoscan be created in a matter of seconds.

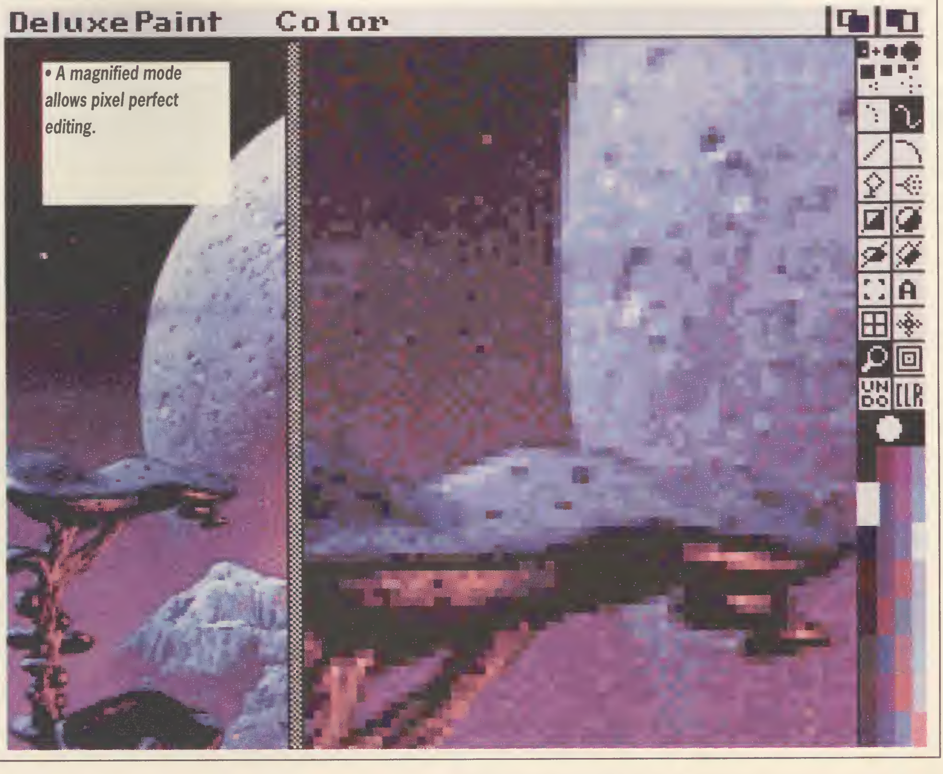
DPaint is the paint package that the Amiga was built for. With the release of version 3 of *DPaint*, Electronic Arts have a package that seems unlikely to ever be bettered (except of course until EA release *DPaint* 4!). The user interface is logical, making even the most complex of functions so easy to use.

If EA had built HAM support into *DPaint*, it would simply be the only choice for the Amiga artist. As it is, you still need to invest in a second package if you wish to take advantage of the Amiga's full graphics capabilities. However, if you can live without HAM, *DPaint* is an essential purchase.



• Right: Deluxe Paint *offers complete control over colours, while (below) it allows intricate mappings.*





• A magnified mode allows pixel perfect editing.

Photon Paint

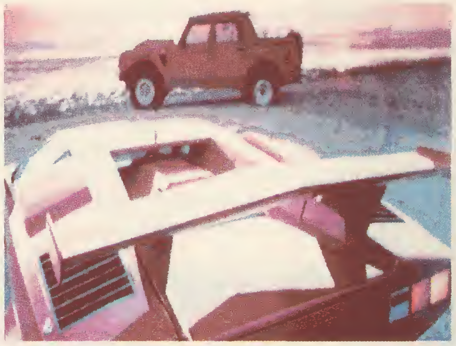
£89.95
MicroIllusions
0480 496497

Disregarding a little known package called *Prism* (anyone remember that one?), MicroIllusions was the first company to produce a HAM-based paint package for the Amiga. When *Photon Paint* version 1 was released back in 1988, it caused quite a stir. Before, HAM had been nothing more than a rather unusable screen mode fit only for digitising pictures, but *Photon Paint* turned it into a feasible alternative to the usual 32-colour low resolution mode.

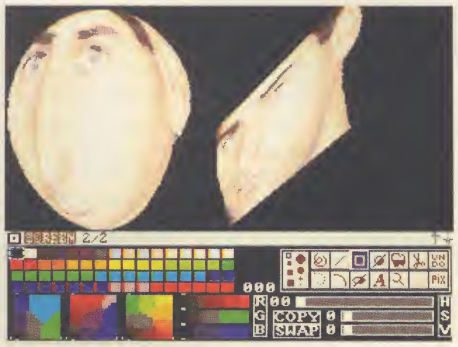
Now we have *Photon Paint* version 2, which includes many enhancements over the original, such as far more powerful brush operations and even animation. MicroIllusions' paint system is a HAM-only package, which makes it less than ideal if you only intend owning just one paint package. It works in both normal and interlaced HAM modes, with the option to paint in full overscan.

The *Photon Paint* user interface is fairly straightforward. Most of the painting operations can be carried out simply by clicking on the appropriate icon in the tools window, while some of the more complex operations must be selected from the pull-down menus. Thankfully, these can also be accessed through keyboard shortcuts.

Of all the HAM-based paint systems featured, *Photon Paint* is the best endowed for creating artwork from scratch. All the standard painting tools are there, plus a few extras unique to *Photon Paint*. You can draw freehand, draw circles, boxes, ellipses, fill areas, plus a whole lot more besides.



• *Photon Paint can only deal with HAM images.*



• *It can map pictures on to shapes and render them.*

One area where *Photon Paint* 2 is particularly well endowed is in the old brush manipulation department. Any section of the screen can be picked up, rotated in three dimensions, stretched, flipped, twisted and bent to your heart's content. However, *Photon Paint* 2 takes the usual brush manipulations tools one step further with its complex contour mapping facility. This allows you to drape a brush over a 3D 'landscape'. The intensity of each pixel within the brush determines the peaks and valleys of the landscape, while a powerful ray-tracing algorithm actually does the dirty work of rendering the resulting image.

A derivative of this is *Photon Paint*'s surface mapping function. Any brush can be mapped onto just about any object, including spheres, boxes and polygons of any shape. To further enhance the image, *Photon Paint* will create realistic shadows for drawn objects.

HAM isn't exactly the best screen mode to produce animations in – it's slow, it uses a notorious amount of memory, and all too often your animations can suffer from the dreaded HAM fringing effect. None the less, *Photon Paint* 2 still manages to do a pretty good job of a tricky task. *Photon Paint*'s animation facility works around a series of swap pages. Each page (or 'frame' if you like) must be drawn separately. Once all are drawn, *Photon Paint* will then flip through them at speed to produce the final animation.

Photon Paint 2 is undoubtedly a powerful system, but it is often rather slow in operation. However, complex brush manipulations involve complex mathematics, so its no wonder. If you've got some perverse reason for just wanting to work with HAM images, then there's no better choice then *PhotonPaint* 2.

Deluxe Photolab

£75
Electronic Arts
0753 46465

Considering EA already has the paint package market virtually sewn up with its *DPaint* system, it seems rather strange that they should produce a second paint system to rival their own. However, *PhotoLab* offers many extras that make it well worth considering.

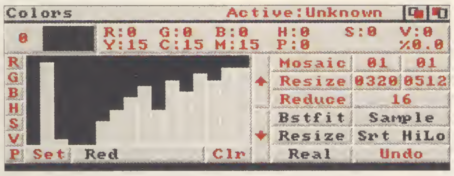
For starters, *PhotoLab* is the only paint system to offer full support for all Amiga screen modes. You can paint in low, medium and high resolution, with interlaced and non-interlaced screens. You can use anything from two colours right up to the full 4,096.

The *PhotoLab* user interface is fairly straightforward. Just like *DPaint*, many of the more commonly used painting operations can be accessed from a strip of icons along the top of the screen. Surprisingly, the colour palette requester actually lives in a separate screen from the paint program. Each time you wish to change the colour palette, *PhotoLab* brings the palette screen to the front, and then flips it back out of sight when you're done with it.

One thing that must be said about *PhotoLab* is the quality of the file requester – to describe it as dire would be paying it a compliment! This thing really is about the worst file requester I have ever encountered.

PhotoLab isn't just a paint package – it's a complete image studio. As well as the *PhotoLab* paint program, the package also includes two other utilities. The first is *Colour,* which is a featured-packed image processing program. It can automatically convert images between graphics modes, match the colour palette of one image with the palette of another, analyse an image's colour usage, and control hue and saturation. For DTP users, it will even colour-separate any image to either red-green-blue or cyan-magenta-yellow.

The second utility is called *Posters* and, as the name suggests, lets you produce massive posters of just about any IFF picture. These can be as large as 10 feet square, or as tiny as a postage stamp. Printing even fairly small posters can take an absolute age, and even then you've got the fun task of having to stick all the individual pages together to form your poster.



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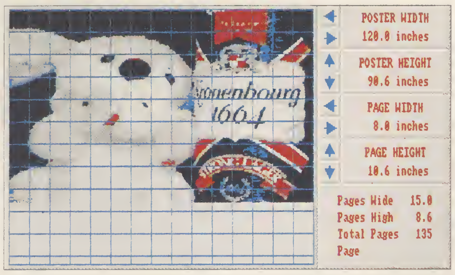
Y:15 C:15 M:15 P:0 %0.0
Red
Mosaic 01 01
Resize 0320 0512
Reduce 16

• *Powerful palette editing functions mark out* Photostudio.

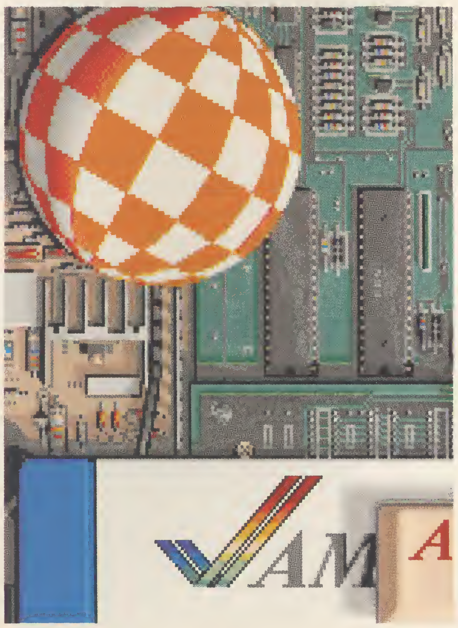


POSTER WIDTH
120.0 inches
POSTER HEIGHT
90.6 inches
PAGE WIDTH
8.0 inches
PAGE HEIGHT
10.6 inches
Pages Wide 15.0
Pages High 8.6
Total Pages 135
Page

• *Posters can be created, with the aid of sticky tape.*

PhotoLab provides an excellent range of tools for manipulating existing artwork, but lacks many of the more powerful operations to be found in abundance within just about all its competitors.

If you need a package for touching up artwork that also includes powerful image processing tools, then *PhotoLab* is worth investigating.



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Amiga

DELUXE NEWS

Electronic Arts' *Deluxe* range of products dictates the standards by which others are judged. Whether it's a paint package you're after, or desktop video system, the *Deluxe* range has something to offer. In most cases, the *Deluxe* products are the best you can buy. But let's face it, music isn't a strong point of the *Deluxe* range. The only thing EA has to offer Amiga musicians is *DeluxeMusic*, a rather quirky (and very slow) score-based package that goes back further than most of us dare to mention. After several years of state of the art MIDI sequencers and *Sound Tracker*-like programs leaving it for dead, *Deluxe Music* has remained the same old turkey it always was.

However, all that could change with the news (well, it's a rumour actually) that EA may be working on a major enhancement to *Deluxe Music* (it'll probably call it *Deluxe Music 3* to keep the range nice and consistent). EA is keeping rather tight-lipped about the whole affair (I still can't get it to say a great deal about *Deluxe Paint 4*!), but it seems almost certain that support for MIDI instruments will be vastly increased – after all, EA's latest release of its *Deluxe* Video system version 3, includes full support for playing MIDI scores.

So what can we expect to see from this new release? Well, it seems almost certain that real-time input from a MIDI keyboard will be included, complete with tools for quantising, transposition etc.

AMIGA IN THE MOVIES

The Amiga seems to crop up in the strangest of places. There I was only the other day, sat watching a video with my bestest girlie by my side, when what should appear on the screen? An Amiga. 'It's an Amiga! It's an Amiga!' I shouted while, jumping around the room with excitement (she hates it when I do that).

Already we've seen the Amiga making cameo appearances in both films and TV programs, including *The Rachel Papers*, *Miami Vice* and even the cult TV series *Rolf's Cartoon Club*. But it seems the Amiga has moved into the realms of horror with this latest release. The film in question is called *Brain Dead* (something I could relate to) and is all about paranoid psychopaths who go around shouting obscenities at people on the streets and being generally weird. Anyway, to cut a long story short, the star of the film uses an Amiga 1000 (classic machine – I still use one extensively) to analyse scans of the human brain.

The Amiga does all sorts of wonderful things, such as spinning a 3D representation of the brain around on-screen in real-time, zooming in on a spectra-scan of the brain, rendering a perspective and cognitive integration display (that's what it said on the monitor screen, anyway!) and other such scientific things. This kind of work isn't exactly new to the Amiga. Already we've heard of several medical establishments in this country and abroad that use the Amiga for very similar applications.

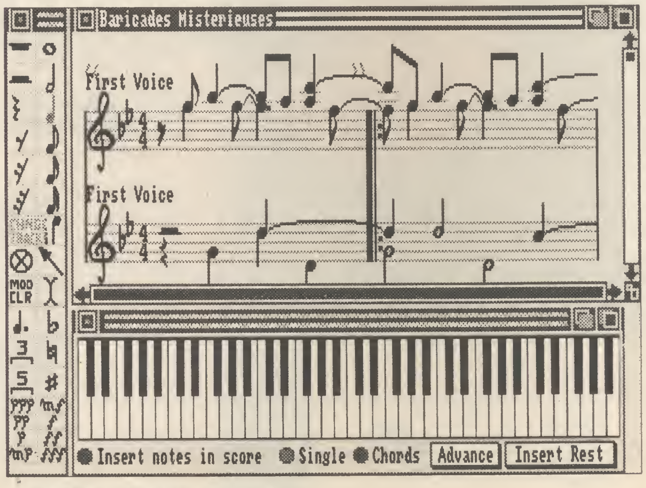
REVENGE OF NORDIC

Data & Electronics Ltd recently whispered in my ear its plans to produce a vastly uprated version of the Nordic Power cartridge. Although the cartridge didn't actually do that well in this country (Datel's unit managed to steal most of the limelight), D&E has been working hard on the new version. Many of the enhancements and changes have been based around suggestions forwarded by both users and magazine reviewers of the original Nordic Cartridge.

Although specific details are still unclear (it wouldn't reveal too much), D&E assured me that the enhanced cartridge would be dead good. Surprisingly, the cartridge isn't going to be called Nordic Power Cartridge II – instead, D&E has decided to plump for a completely different name altogether (although they still haven't decided what to call it). I've been promised one of these wonders in time for next week's column, so stay tuned for juicy specification-type details.

GAMBLER'S DELIGHT

Amiga owners who have a weak spot for the gee-gees will be pleased to hear



• *Deluxe Music: joining the exclusive set.*

that Steve Marriot, programmer of TAM Marketing's *The Tipster* racing prediction program, has been hard at work on an enhanced version which is now due for release. *Tipster International* (catchy name, Steve) uses the same proven prediction system but boasts an enhanced user interface complete with pretty graphics, the works. For more info, give TAM a bell on 0392 215485

A-MAX II ARRIVES

Entertainment International has finally taken shipment of the first batch of A-Max II Mac emulators. As reported in a past issue of *Express*, this upgrade offers many enhancements over the original. According to those nice people at EA, A-Max II has been largely re-written from scratch to provide a considerably more stable emulation environment. Other enhancements include the ability to access partitions on an Amiga hard drive (A-Max desparately needed this!), access to Mac SCSI devices from an Amiga SCSI interface (most hard drive controllers seem to offer them these days) and the ability to play Mac digitised sounds.

A-Max II is available from EI for £170. Because A-Max II is a software-only upgrade, existing users can upgrade their A-Max version 1's for a mere £30. EA also sells A-Max II complete with a set of 128K Mac ROMs for £260.

For 2000 users wanting to get their hands on the all new card-based A-Max II Plus, the bad news is that you've still got a few months to wait. As you'll already be aware, A-Max II Plus fits internally to the Amiga 2000 (and 2500, 3000 etc) and offers direct reading and writing of Mac-format disks with standard Amiga drives, support for Mac MIDI software and compatibility with AppleTalk networks and peripherals such as the Apple LaserWriter. EI expects A-Max II *Plus* to be available late December (let's call it January to be safe) for approximately £450. Of course, existing A-Max owners will be able to upgrade.

A590 UPGRADES

OK, so you've bought Commodore's A590 hard drive, only to find that 20Mb is just not enough; am I right? Don't worry, I know the score – you spent an entire day setting the thing up, customising all your icons and copying across all your favourite utilities, paint, anything else that can be copied, only to find that the damned thing is filled up already (sounds familiar, huh?). Well, for people like you, Almathera Systems (now there's a name), has made available a number of upgrades for the A590 hard drive system. Almathera can offer replacement SCSI drives that offer an average access time of 25ms (which is not bad at all when you consider that the drive inside the A590 has an average access time of 88ms). Drives are available in sizes ranging from 43Mb to a more usuable 18 Mb (just think how long it would take you to fill that baby!).

For more info, give the lads at Almathera a bell on 081-668 9605.

Jason Holborn

Archimedes

ACORN USER SHOW REPORT

For those that didn't turn up at the New Horticultural Hall this year, tough. I'd rate it as a pretty good show. Not quite as big as last year's Alexandra Palace jamboree, reflecting the drop off in the 8-bit Beeb market, but the number of Archimedes stands and the quality of the product on offer was well up. And it could be the only computer show for the next six months with nobody dressed as a mutant turtle to hype a martial arts game.

Humour highlight of the show was definitely the new carpet, carefully laid to cover the hall's rather tatty floor and add a quality veneer to the venue. But after less than a day of shuffling feet, it began to accumulate little balls of fluff like my old pullovers. On day two it looked in dire need of the once-over with Victor Kiam's latest gadget. And by day three, several of the smaller stands had been cut off by drifts.

SUPER ARC

Even in the new enlarged Arc column I can't cover everything in one week, so there'll be chunks of show-news over the next three columns. This week: hardware. Acorn did indeed announce and show the A540 super-Arc described in *Express* issue 95. It is, as predicted, simply a Unix-less version of the R260 workstation, at a modest £3,500. Erk. Externally it's the same as a 410. Inside it has the 260's new, modular circuit board and a power- supply with two fans. The main board has no processor chip on it, and a 'bare minimum' 4Mb of Ram. The 30MHz ARM 3 processor sits on a separate slot-in card, which means that you'll be able to upgrade it later when the floating-point accelerator is available. You can also add extra RAM on other cards, taking the total to 8 or 16 Mb.

The memory system of the new machines is clocked at 12MHz, half as fast again as the normal Arcs. But as the whole point of the ARM 3's on-chip memory cache is that the processor doesn't have to wait too much for the RAM chips to catch up, the extra zip in the memory system doesn't speed up the number-crunching performance as much as you would expect. Acorn rates the machine at 13.5 MIPS, and you can get almost that with a normal Arc and an ARM 3 upgrade. Mind you, that is faster than your average £10,000 486 PC.

Where the memory speed really helps is with the display. It means that even higher resolution screen modes are possible without running out of bandwidth, like super-VGA modes with 800 by 600 pixels with 16 colours, or 640 by 480 with 256 colours. Some of the demo-pictures, colour scans and ray-tracings were well worth gawping at.

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The final difference is the hard disk. It's a 100Mb jobbie, inside the box but connected via a SCSI podule. There's no hard disk interface at all on the main board, but the podule is standard, something of a backward step I would hazard.

NOT SO FAST

Some pundits say the SCSI interface is faster than the ST506 drive interface used by the the normal Arcs. In raw data-transfer terms, that's true. But the effective speed of a drive is constrained much more by its track-to-track access time, and that has nothing to do with the type of interface used. But SCSI will doubtless be useful to the deep-pocketed people who buy A540s, for you can add a tape streamers or WORM drive for backing-up the hard disk. Great Idea!

NEAT

Hardware fans with rather less capacious pockets were tempted with a slinky little internal hard disk for the A3000 (yup, internal), plus the first news of an ARM 3 upgrade that could go in an A3000. Ian Copestake showed the bijou drivettes. Idea is a tiny 2.5-inch drive, about half an inch in height, made by Prairietek. Normally, they are intended for PC portables and hard-cards, but they're ideal for the A3000: small, silent and drawing only 9 watts of power.

The hard drive sits in the space reserved for the internal mini-podule, at the centre- rear between the power supply and the floppy drive. It's attached directly to a little circuit board with the interface electronics, and that plugs into the normal mini-podule connector. Amazingly neat. There is even a disk cache on board, so it's also fast. The connection used is the IDE interface (also known as the PC AT bus), hence the name. There are 20 and 40 Mb versions of Idea, at a planned price of about £500 and upwards for internal A3000 fitting, and versions up to 200Mb for fitting inside an A310 (without needing a backplane). Ian Copestake is on 051-648 6287.

ARM YOURSELF

Normally you can't add an ARM 3 to an A3000. There's no good reason, except it won't fit. The existing ARM 2 is surface-mounted in an A3000, not plugged into a socket, which makes it more reliable. But you can't add any of the existing ARM 3 upgrades, as they fit via a big square pillar which plugs into the ARM 2 socket on a 310 or 400 series Arc. Atop the pillar sits the ARM 3 board. In any case, there isn't enough headroom for the pillar arrangement in an A3000, as the whole lot has to go underneath the floppy drive.

Aleph 1's plan is a new variant of its 30MHz ARM 3 board, which can be surface- mounted in place of the ARM 2, and which is not too tall to touch the drive. When fully available, it could boost a bog-standard A3000 into double figures on the MIPS meter for just a bit more than current ARM 3 upgrades (the extra cost pays for the difficulty of surface-mounting).

Aleph 1 is on 0223 811679, but more details here when the plans are firmer.

SNIPPETS

Two programs that were formerly available from various so-called 'public domain' sources, *SoundTracker* and *ChangeFSI* went commercial, through The Serial Port and Wild Vision respectively. Eclipse's *Blowpipe* and a game called *Mad Professor* from the author of *Arc Terramex*, enlivened gamer's lives. But the real noise was made by *Interdictor II*. Clares demoed this with a neat new Sharp video projector; a wall-sized image and sound from hi-fi speakers makes *Interdictor 2* a 'truly life enriching' experience.

Arxe (who put together the Spectrum emulator) showed a new Beeb emulator that's over twice as fast as the original, and *MultiFS* which gives you desktop access to PC, ST and old Beeb DFS discs. Minerva debuted *PC Access*, a similar and rather polished MS-DOS filing system that makes it dead easy to use PC disks on the desktop. More on the games, emulator and filing systems next week in *Express* 100, together with a full review of Minerva's *Desktop Office* that I previewed in *Express* 96.

Schema, *Ovation*, *Tempest*, *Impression 2* and *Junior*, *Equasor*, colour scanning, three (count 'em!) direct-drive laser printers, and a little progress on fonts follows the week after.

FAVORITE SHIRTS

Legend has it that software development at Apple starts with the design of the icon and the T-shirt. It's good to see this philosophy rubbing off on the Acorn world. The Best T-Shirt Award must go to Atomwide, with a design entitled 'Footprints in the snow'. I'm assured that the design itself was created with *Draw*. An honourable mention goes to the staff on the Serial Port stand. Wanna do your own, though? Know someone with an Integrex colour ink-jet printer? OK, now hands up those of you who know about textile printing ink cartridges for the Integrex. I haven't tried yet, but it could be as simple as printing a sprite from *Paint*: I'll let you know. Integrex is on 0283 215432.

Ken Coumarin

PC

CONSOLE REACTION

Now that the dust has settled following the launch of Amstrad's new machines, the trade itself will have had time to think about the implications – and the general response is extremely favourable.

The big worry of course is that with Amstrad's move into the console market, all the software publishers are going to follow suit. Various chats with the trade, however, have dispelled those fears. As I suspected at the start, publishers, particularly of budget software, already have a big market, and they're keen to retain that as well as dabble with the console.

Codemasters, particularly, is keen to carry on with budget software: "We can't stop producing cassette software. We won't stop, and we don't have to stop," says spokesman Mike Clark. At the same time, Codemasters is also looking to produce console software itself.

And Gremlin Graphics boss Ian Stewart was equally keen not to simply drop the existing tape/disk market for the console. Asked whether Gremlin might even release games on cartridge, tape and disk, he said: "That is a possibility. It would depend on how successful the cartridge machines are. We will not ignore the existing market out there. What we're more likely to do is produce cartridge products, and at a later date produce the tape and disk-based products."

THREE FORMATS INSTEAD OF TWO?

One interesting technical question about cartridge software is whether console versions of existing games have to be written 'from the ground up'. Is the console hardware so radically different from the 'normal' hardware that programmers are effectively writing for two different machines? Or will it be relatively easy to make 'souped-up' versions of tape/disk games that make full use of the extra console hardware?

At the moment, no-one seems entirely sure. Some developers are saying the two machines are completely different, some are saying conversions would be comparatively straightforward. We shall see. If the latter proves to be true it'll be good news all round; console gamesters will get a greater range of games to choose from and the tape/disk market will continue to thrive.

AUDIOGENIC AVALANCHE!

We haven't heard much from Audiogenic in recent times, but it's back in the Amstrad games market with a vengeance this autumn, with no fewer than four new games.

Emlyn Hughes Arcade Quiz promises to be a bit of a departure from normal quiz games, which Audiogenic reckons can be 'boring'. It's game is not based on any of the TV quizzes, and Audiogenic says it's been designed specifically for computers. We shall see.

Loopz is quite different. It's like a cross between *Tetris* and *Pipe Mania*, where you get presented with various shapes you have to rotate, fiddle about with and form into loops. The bigger the loop, the more you score. And all the time you're up against a tough time limit.

Helter Skelter has you controlling a bouncy ball, which bounces along bouncing enemies into oblivion, while *Exterminator* casts you in the role of a pest-control officer ridding a house of all sorts of creepy-crawlies.

Prices for all these games are going to be £10.99 on cassette, £14.99 on disk.

NIGHT HUNTER

OK, I know it was only last week that I reviewed a French game and... yes, I know that one was from Ubi Soft too, but...

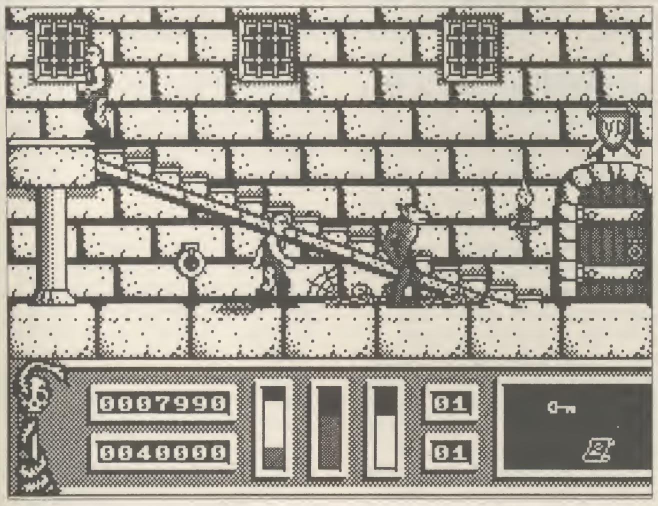
Well, the fact is that *Night Hunter* is just so good I just had to rush straight back from playing it and write this glowing review.

Night Hunter is basically a suck-'em-up. You play the part of a bloodsucking vampire battling against all manner of do-gooding priests, virgins and woodsmen as you search for a total of five keys and three scrolls that will get you off that level and onto the next.

The bad news is, first of all, that it's a standard platform collect-'em-up, and not a hugely demanding one at that. Secondly, it's all done in Mode 1, so you only get four colours.

The good news however, is that this game is just so funny. You see the way you recharge your depleting energy supplies, as you search for these objects, is by grabbing the nearest human being and sucking the life out of them. The animation is great, the sucking sound-effects brilliant. The first few times, it's hard to play for laughing!

Being Dracula, of course, you can change into a bat when it suits you. Not so expected is your ability to transform into a werewolf too. Each of these creatures is useful in certain circumstances. Bat-mode is good for getting from A to B quickly, but you can't land on platforms, pick up objects or open doors. Werewolf-mode is good for bashing opponents (they reel back, stunned) and leaping trapdoors (Dracula just plunges to his doom).



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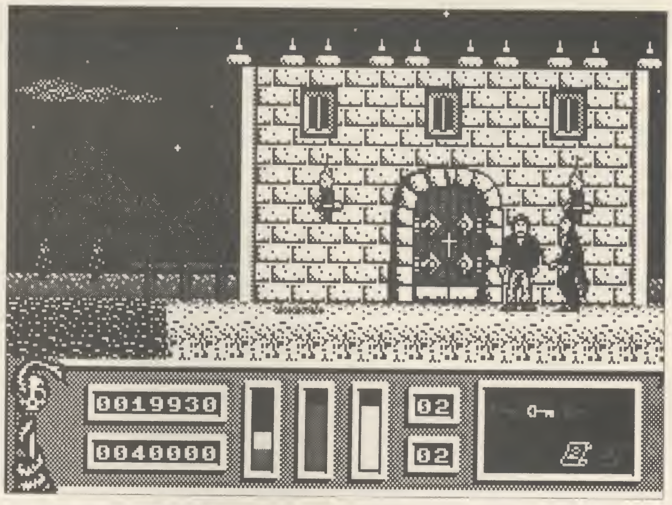

• Level Two, and your first victim. Yum yum!

It takes a while to learn the moves offered by each creature and which one to select in which situation, but before long you should have got all your objects together. Your problems don't end there. As soon as you've collected the lot, an indestructible Baron von Helsing appears and gives you a hell of a rough ride as you head for the exit door.

The first level isn't easy, but it's not hard either. Once you've completed it though, there are another four to go – enough to keep you going for quite a while.

Night Hunter has a pretty standard game style, but it has a blend of humour, playability and atmosphere that makes it a rare treat of a game. The graphics may be only four-colour, but the resolution is correspondingly high and the animation excellent. As are the sound effects and sound track. Great stuff. Look out for it soon in the shops. I don't know the price yet, but I would assume it's around the usual £10/£15 cassette/disk level.

TIPETTES

Just time for a few fascinating little tipettes discovered by Allan Barklie of Ballymena, County Antrim.

In some cases it is necessary to reset the computer before typing in the instruction.

1. For rough italics in mode 1 type: CALL &BA45
2. For four colours in mode 2 type (scrambled writing though): CALL &BA45
3. For a weird on-screen display (accompanied by clicking on the tape recorder) type: CALL 19 [enter] then CALL 19 again.
4. For a screen full of fuzz follow the following guide:
   i) Type: `POKE &ba45,1`
   ii) Press your hand up and down on the right hand side of the keyboard (the area surrounding and including the large Enter key) until fuzz the size of one character appears
   iii) Press the Enter key until the whole screen fills with fuzz
   iv) An endless maze can now be scrolled through using the arrow keys
5. For anyone creating user-defined characters I find that a chess or draughts board makes a perfect grid for designing on.

Rod Lawton

64

ALL DRESSED UP WITH NO GAMES TO SHOW

The CES show didn't deliver much in terms of excitement generally, so when I write that there was almost nothing on offer for the C64, don't feel especially disappointed. Commodore's stand certainly paid its old workhorse the respect it deserved, with a dozen or so machines set up allowing visitors to play to their hearts' content, as so many have done for the last eight years. *Back To The Future II* was the stand's nod in the direction of current releases; others harked back as far as *International Soccer*. At least none of them had passed their sell-by date. The machines themselves, however, were imprisoned beneath rigid counters (theives have now created the situation where the most invisible object at a computer show is a computer), so there was no sight of the expected console. In fact all Commodore had to celebrate their oldest baby's new lease of life was a dodgy piece of promotional blurb on a single-sided flier. Ah well.

LOTUS

Barely heard above the cacophony caused by this year's plethora of needlessly improved sound systems was the oft-repeated promise that, "It's on its way." You didn't have to hear that remark to come to the same conclusion though. If you went along to Gremlin's stand you would have seen the *Lotus Esprit Turbo* and big display screens running demo versions of the game on which it's based, in a 16-bit format. (Apparently, the C64 version of *Lotus Esprit Turbo Challenge* is going to be one of the last to appear. Whereas other formats will be attended to around November, regarding the C64 release the most that Gremlin's Ian Richardson was hoping for was "a late December release".) On Mirrorsoft's stand, two of the Turtles were available for photo-calls but, despite their posing and dancing abilities, they failed to break into a single 64 for the whole four days. Such stories were repeated on every stand.

ON THE NIGHT SHIFT

However, I did manage to steal away from the show on Friday afternoon and talk briefly to Doug Glen, the managing director of Lucasfilm Games. In a hotel room a sane three blocks away from Earls Court, I was given a preview of *Night Shift*, the company's next C64 release. In it, you play a worker at the Industrial Might and Logic (sic) plant who gets orders to produce so many Imperial Stormtroopers or Ewoks or ETs in a night. You have to negotiate conveyor-belts and massive machines in order to fill your quota in one shift, and the factory in which you work is a massively vaulted place, crammed with devices designed to be used by skilled operators only. Seems that despite being something of a departure from the norm – for people who used to go a bundle on fractals – it's going to be great fun. Glen noted the arrival of the C64GS console with fair comment, saying that if the market proved to be in favour of ROM-based software, then Lucasfilm Games would be interested in it. As things stand, the Lucasfilm release to follow *Night Shift*, *Secret Weapons of the Luftwaffe*, will not appear on the C64 because of its lack of memory. Development of the Commodore scene console might go some way to rectifying that situation. Thumbs twiddle in anticipation of the Big C's next move.

Sean Masterson

Pc

POINTING WITH A LIGHT TOUCH

To be honest it's not easy thinking of much interesting to say about a mouse, but the latest squeaker to hit the market does have some nice features.

Called 'The Mouse Systems PC Mouse III', it's a very tidy looking grey unit which is conventional in styling rather than going for the curvy Microsoft Mouse look. In the hand it feels a trifle small for my taste, but I do have long fingers so it will probably suit most people. Its action is excellent – which is surprising as I have never been very impressed with the feel of optical or electromagnetic mice, and this is one of the former.

Being an optical mouse it has no ball; instead it shines a light onto a special mouse- mat engraved with a fine grid of lines. A light detector tells the mouse when it has passed over a line and the software does the rest. As there are no moving parts it is impossible for it to get clogged up or stick, but on the down-side it will not work at all without its mat.

Flexibility is the name of the game when it comes to connections; it will fit any variety of serial port or plug into the PS/2 mouse socket, and its software will emulate the Microsoft Mouse if you need it to. I had no problems getting it to work with any software, which is something I couldn't say about certain other mice I could mention.

The manual says you can set the sensitivity up to 30,000 dots per inch, but on that setting an EGA screen is just a fiftieth of an inch of mouse movement across, so it's difficult to see the point. But the variable acceleration settings are handy.

No mouse these days is complete without a bunch of software: paint program – check; pop-up mouse controller – check; menuing system for non-windowed programs – check; useless card game – check.

All in all the PC Mouse III is a pretty good mouse, as long as you don't mind the limitations of needing the special mouse mat. It costs £93 from Mouse Systems on 0256 461744.

FREE RANGE PROGRAMS

Domark's *MemoryMate* is quite difficult to describe. It's a sort of free-form database; you can enter data as a page of text in any layout or design you like; there are no formalised fields and you don't need to specify keywords to find an entry.

MemoryMate is a memory-resident program called up by a hotkey, so it's always there when you need it. The idea is that you can jot down notes in it or keep a things-to-do list. I actually find it most useful as a super address book. Because you can enter any information besides the address and phone number you can set up a page so it contains all the information you need to know when calling someone up. As every word in the database is indexed you can jot down a list of areas which someone has an interest in and then call up, say, all the mouse manufaturers by searching for Mouse.

This in itself would make *MemoryMate* useful, but where it really stands out is in its ability to make your data into a hypertext document. Hypertext is the system whereby clicking on a word with a mouse takes you to an explanation of that word or some other linked topic. *MemoryMate* comes with a DOS-help hypertext database, but it's not too dificult to make your own. System managers should love this ability to provide on-line system help in a friendly form no matter what program is running.

Memorymate is surprisingly easy to use and quickly becomes an essential part of your PCs equipment. I use a similar system, *QuickDEX*, on the Macintosh and wouldn't be without that either.

MemoryMate costs £44.99 from Domark on 071-780 2224.

SNAP HAPPY

The American company Dycam is working on a battery-operated still video

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camera which will use a PC's laser printer as the output device. The tiny camera uses a charge coupled device to take the pictures and rather than have its own integral disk drive, as other such cameras do, it slots into a cradle which fits onto the serial port to download the images to the PC. Once there they can be edited and printed.

There's no word on price or availability yet, but the Macintosh version, which is already out, costs around a thousand dollars.

TOO SLOW?

If your 386 is slowing you down but you can't afford the real pose value of a 486, how about a plug-in 486 adapter? As the 486 is almost identical to the 386 as far as software is concerned it needs very little adaptation to get it to fit into the same socket.

TransComputer of California sells the tiny board you need for less than $500; but you'll need your own 486 chip as well. Call 0101408 747 1355 for the adapter, go to Halfords for the go-faster stripes.

NEW FONTS

Most laser printed documents suffer from looking as though they have come off a laser printer; not because of the print quality but because of the fonts they use. Helvetica, Times and Courier are the big offenders as far as LaserJet owners are concerned, while Palatino, Avante Garde and Century mark out a PostScript laser.

Having more fonts is, however, a very space-consuming business. I recently filled up my 40Mb hard drive just by generating a few soft fonts for the laser I was testing. So good news for those who can afford it comes from NEC.

The firm has issued a CD-ROM disk which contains no less than 600 PostScript fonts -that's the entire Adobe catalogue – and another containing 76 LaserJet fonts. In the States these fonts sell for the equivalent of £10 each; a bargain if you are a publisher. The best bit though is the encoding system, which means you can buy the disk and then choose only the fonts you want and pay for just those. All the other fonts are there and can be yours if you pay for the appropriate password to access them.

Of course you need a CD-ROM player to use the disks, but the price of these is coming down all the time.

HEALTHY EATING

Your PC could help you keep fit with a program from Oregon in the US. Called *The Food Processor* it can analyse any diet for nutritional content and give advice on how to improve it. The program recognises 2,400 different foods and can analyse them for 300 nutrients.

The health conscious can phone 0101 503 585 6242.

Stuart Anderton

Spectrum

BAD NEWS

Bad news. Bad to the point of being disastrous news. As you see from this week's *Express*, Amstrad has decided to stop production of the Spectrum Plus 3 and I still don't believe it. This amazing decision is surprising, even given Amstrad's past record of neglect, injustice and general nastiness directed against we Plus 3ers over the last few years.

Now I know Amstrad isn't a nice pink, fluffy company, it's a steel-hard capitalist, devoid of all sentiment, which would sell grannies if it thought it could import them cheaply from Taiwan and not have any warranty problems. And that's what makes this decision so completely surprising. The Plus 3 still shifts very well indeed, despite Amstrad's dismal promotions (how can James Bond see off Ninja Turtles?), blatant over-pricing and the majority of the computer press's preoccupation with sexier STs and Amigas.

Around 40 per cent of all computers sold in Britain are Spectrums, with more Plus 3s in Britain than either STs or Amigas. So why stop selling it? I thought Amstrad practice was the making of large piles of cash at the expense of everything else?

The trouble might lie with the way the Plus 3 was misunderstood from the start, with Amstrad introducing it as a 16-bit rival with a £250 price tag, and then gradually dropping the unfortunate thing's status down to a poor-man's games console with keyboard and dodgy light gun. Problems with distorted sound and interface incompatibilty didn't help matters either, and at the end of the day it's real strengths of versatility, range of software and fast loading, were never high-lighted so the machine was never really seen as anything more than a Speccy with a disk drive bolted on by both software houses and press alike.

But it still sold well and built up a huge, enthusiastic following from its hordes of users. Hopefully this same enthusiasm will keep interest in the machine going for years to come and organisations like The Plus 3 UsersGroup can only help. But enough of my ranting, what do you think of Amstrad's decision to stop selling the Plus 3? And what signifigance do you think this holds for the Plus 2 and the survival of the Spectrum in general? Write to me as soon as you can at *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW. Feel free to swear a lot about Amstrad.

THE PLOT THICKENS

Ocean's new game *Plotting* sounds like something you might want to bag-up when it's released for the Speccy next month. It's another conversion from the overbearingly cute and cuddly school of arcade games, with you controlling a lovable potato or something. The game's a puzzle style one, involving the shunting about and matching up of patterned blocks with elements of *Boulderdash*, *Tetris* and *Pipe Mania* incorporated. Basically endless fun for all the family is more or less a certainty. Check out the definitive review in the next *Your Sinclair* due out on October 6.

ONE THING LEADS TO ANOTHER

One of the most annoying things in the world, along with Jeremy Beadle of course, is the way the Plus 3 doesn't save or load things to tape very well. Until now that is. The Plus 3 Users' Group has made up a new, improved Plus 3 tape lead, which apparently banishes those tape loading and saving blues once and for all.

They are different to traditional tape leads in a few ways. For starters the sound output is taken from the monitor socket of the Plus 3 where the sound is at a lower level and less distorted. A capacitor is also fitted across the load-line to make sure the sound going into the Plus 3 is at optimum frequency for reliable loading. The leads in question are also pretty long, so you don't have any problems trying to stretch them across your deluxe MFI computer-desk. The Plus 3UG's tape leads costs £5.99 each, inc. p&p, and I'd welcome users' comments as to whether they do actually improve loading and saving reliability. If you're convinced, make a cheque for the appropriate amount to Garner Designs, and send it to Gary Stimson, 4 Fox Covert Drive, Roade, Northants NN7 2LL.

SPECDRUM

Datel Electronics now seems to be the chief purveyor of all Speccy kit. The latest product it's bought up, reduced the price of and now, reselling is Cheetah's *SpecDrum*. This was released a few years ago to loud cheering and basically brings the wonder and loud thumpy noises of a drum kit to your Speccy. You compose your rythmn through a menu, and the drum sounds are realistic enough, when put through an amplifier, to make the neighbours complain. *SpecDrum* comes complete with an extra drum-kit and editor program for £14.99 from Datel Electronics Ltd, Govan Road, Fenton Industrial Estate, Fenton, Stoke-On-Trent ST4 2RS.

BARGAIN

Now here's a bargain offer that should be announced by a be-suited man jumping through a large sheet of paper in the style of 70s MFI adverts. *Your Sinclair* has just put together an absolutely huge tome of tips, hints, cheats, maps and pokes for some of the best Spectrum games ever.

This monolithic slab of wood (made from 100 per cent recycled tree) is called the *YS Tipshop Tiptionary* and comes complete with a cassette, including 200 pokes bearing infinite benefits so you don't have to bother typing them out.

Usually the *Tiptionary* costs £8.95, but if look inside the latest *YS* you'll find a coupon entitling you to £2 discount as long as you send it off before the end of October. Act now while you've still got time.

Robin Alway

ST

ATARI GOES FOR IT

The news that Atari has unveiled its 520 STE Turbo package indicates that the company is winding itself up for what could turn out to be its most important autumn offensive ever.

Why? Well, with the STE fiasco – the less said about which the better – now but an embarrassing memory, Atari is beginning to show signs of revitalisation. And Atari is known to be absolutely determined to get it right from now on.

The latest bundle gets the tone exactly right. It includes: the much-improved (and about time too) 1st BASIC; an STE version of *Hyperpaint 2*; *Music Maker 2* – music being a crucial area of growth for the ST range; *STOS*; and eight computer games, among them the rather good *Indiana Jones and the Last Crusade*, *Dragons Breath*, *Blood Money* (still in the ST charts), *Human Killing Machine* and *Out run*.

What the whole bundle demonstrates convincingly to the newcomer is the wide range of activities the ST opens up.

The price? Well, you'll get a wee bit of change out of £400, which represents not a bad bundle at all.

And Atari is promising to spend over £4 million advertising the ST range between now and the end of the year, helping to bring what the PR people call the 'installed user base' to over 400,000 by the year's end (Atari's own figures).

WHY SO EXCITED?

I know what you're saying, "But what does that have to do with me, for flipping heck's sakes? I already have an ST!" Well, quite. But it doesn't take much mental gymnastics to work out that the more people who buy STs between now and Christmas, the more encouragement there'll be for the software houses selling games and serious software over the next year.

So go on then. Convince a friend to buy an ST, now.

TAKING CARE OF BUSINESS

FinanSoft proudly announces *Double Sentry Elite* (shame about the name), the updated version of an already very successful program.

The three main enhancements are: the ability to address purchase, sales and nominal accounts by name (rather than the old tedious process of having to look up the relevant account number); the provision of an automatic direct debits and standing orders facility; and improvements to the payments made and payments received routines.

Double Sentry Elite, which runs in colour or mono on double-sided drive STs and requires 1Mb of RAM, costs £4.99 from FinanSoft

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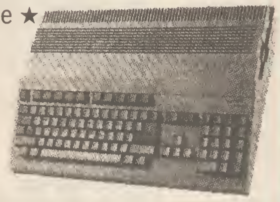

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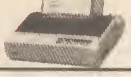

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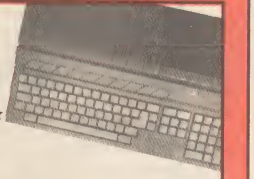

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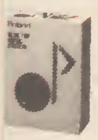

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QUESTION TIME

This is the question. Here it comes. What would you do if you were invited to the launch of a game called *Magic Garden*, billed as, "The first garden that exists inside an ST"?

Now you can, apparently, "do five minutes before you go to work," or even (get this), "five minutes when you get back." You can, so it is said, "devote an entire weekend to your garden," or, so the invitation explains, you can "work on it for years." Well, whew.

But the greatest thing of all – I can barely take the excitement – is that you don't even need to get your hands dirty.

All this puzzlingness comes courtesy of Electronic Zoo, which clearly has something up its sleeve.

Answers please, on a postcard, to Steve Carey's Garden Question Time, *Express*, 30 Monmouth Street, Bath BA1 2BW.

COURSES FOR HORSES

A warm welcome, ladies and gentlemen if you will, for *The Tipster*, the latest piece of software from the TAM Marketing stable (pardon the pun). It's a horseracing program of some power for selecting winners in both national hunt and flat races.

I can't promise it'll turn you into an instant millionaire (not even writing the ST column for *Express* can do that), but it sure as hell is more scientific than closing your eyes and sticking a pin into the racing column of the *Daily Mirror*.

The Tipster is available by mail order from TAM Marketing on 0392 215485 for £29.95. It could be the best move you ever made.

BUDGET GETS GOING?

The second discovery any owner of an 8-bit machine makes when loading up an ST game is just how fast, fabulous and colourful life can be. After just a few hours you find yourself wondering why you left it so long to move up to Atari, where the real action is. Those of us who began our joystick-bashing with an obligatory coffee-making session while a game loaded from tape know the meaning of the word pain.

And the first discovery? When you've been used to games on tape and even top-price titles offering you the chance to go for a wee for a tenner, it's comes as a bit of a shock to have to hand over £25 for the latest title.

Step forward and take a bow Digital Integration, whose Action 16 budget label has got off to something of a flying start. The first three titles, launched only recently, have all gone straight into the ST budget top ten.

We should, I think, draw a veil over *On Safari*, a clapped out old load of nonsense that has appeared several times before – originally in a version that had you shooting the wildlife in Africa. Times have moved on however and now, with Action 16's version (as at least twice before) you're photographing the big game while shooting those nasty hunters and poachers.

The press release's rather unctuous nonsense about, "One of the unique aspects of the game is the way emphasis is put on conservation rather than plain killing, which distinguishes most computer games", fairly made me chuck my lunch. Crap, in a word.

Much better are *Targhan* and *Fastlane*, two titles well worth a fiver of any punter's cash. The former is a Silmarils title that's ideal for hack-n'-slice fans, while the other was originally an Artronic game that looked quite respectable a year ago. "It's certainly the best driving game in the whole world for under a fiver," claims Action 16 operations manager Rod Cobain, and who am I to argue?

New releases are due soon. Give Action 16 a bell on 0276 684959.

CONFUSION ABOUNDS

We got a bit confused in *Express* a couple of issues back about PC emulators. It seems we got the ATonce and AT Speed emulators a trifle mixed up. The bottom line is this: Full Circle Tecnologies is supplying the ATonce board, Gasteiner the AT Speed. As far as we know both companies have stocks of these items; anything you have read in the last few issues to the contrary is, to use the publishing term, bollocks.

Look out for a review of the ATonce board soon in *Express*.

HAT'S OFF AGAIN

HAT Software, known in educational circles for *Stage II*, *First Paint*, *Learning to Type* and *Jigspell*, has just announced its latest title, *Nought to Nine*. Confusingly, this isn't for everyone from birth to nine years old, but a program for introducing the numbers 0 to 9 for pre-school children up to six years old.

One interesting option for those with big ears is the use of samples, and for owners of Replay 4, the option to introduce samples made with that software.

Nought to Nine costs 14.95 from HAT Software – which have moved recently – on 0743 249536. Or write to HAT on 3 Alton Terrace, Belle Vue, Shrewsbury, Shropshire SY3 ILW.

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POWER EXTREME

Thanks for the letters we've had on the new-look *Express*. One in particular, from Peter Davis of Dorking, took my eye: "Are you sure about this, Steve?" Apparently Pete is none too keen on the ST column being regulated to what he calls, "the bog-paper section."

On the other hand, he does rather like the new, packed look of *Express*, and I have to say I agree with him.

Any comments on the new, revitalised and really quite good *Express* are invited. Write (on this or any other matter) to Steve Carey's ST Universe, *Express*, 30 Monmouth Street, Bath BA1 2BW.

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ALT286	(£1390.43)	£1599.00
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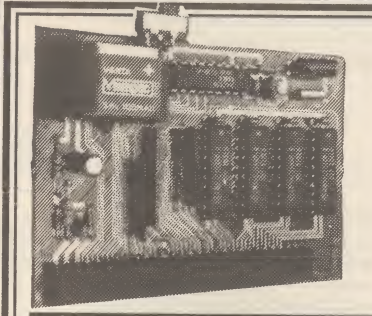

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512K RAM/CLOCK EXPANSION FEATURES :

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Fully compatible, high quality 3.5" external drives for the ST and Amiga

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21MB ... £225.00   32MB ... £239.00   41MB ... £279.00

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10...£ 9.95 in plastic case £11.95
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Fully guaranteed double sided media

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All prices include VAT, delivery and cable

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Star LC24-10 feature-packed multifont 24 pin printer, amazing low price	£239.00
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NEC P2+ budget 24pin, special low price!	**£239.00**
Panasonic KXP1180 super 9pin with over 3400 typestyles, 11" carriage	£179.00
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Mannesmann Tally MT-81 130/24 cps	£149.00

ATARI Lynx Portable Games System

- Fantastic hand-held portable 16-bit video games machine
- Excellent built-in high definition, full colour LCD display
- Capable of displaying up to 16 colours out of a possible 4096
- 32-bit audio processor produces superb 4-Channel sound
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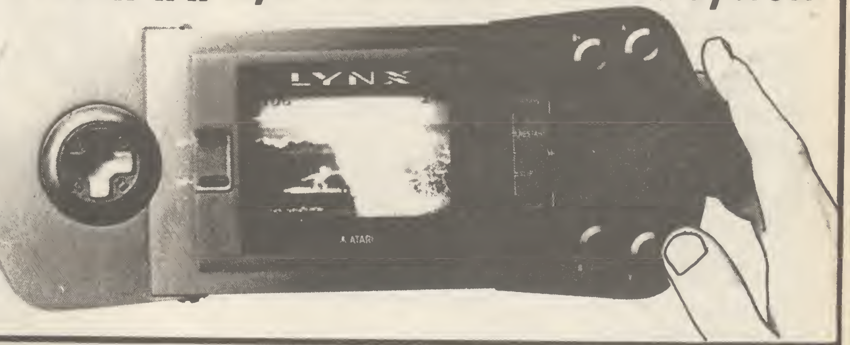
- Multiplayer Competitions possible using COMLYNX cable (supplied) to connect with other Atari Lynx systems
- Free California Games (multiplayer) game card supplied!
- Uses 6 x AA batteries (not supplied) or AC adapter (supplied)

ONLY £159.00 including VAT and delivery



Game Cards now available :

Blue Lightning	£19.95
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All A500 Packages also include the following :

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Wordwright (w processor)
Nigel Mansell's Grand Prix
Better Dead than Alien
Super Huey
Goldrunner
Night Walk

A500 512K **Flight of Fantasy pack** includes 4 software titles and TV modulator	£379.00
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MiniGEN Genlock Adapter	£95.00
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Contriver Hi-Res replacement Mouse pack	£22.95
Amiga 500 dust cover	£4.95

CBM A590 HARD DRIVE

Good quality 20Mb Hard Disk from Commodore, including its own PSU. Features sockets for up to 2Mb of FAST RAM expansion (see below). 80ms Access time, with up to 2.4Mb/sec transfer rate. Will autoboot when used with Kickstart 1.3. Has built-in cooling fan.

A590 (20Mb) only £379.00
40Mb version only £499.00

A590 512K RAM Upgrade kit	£36.00
A590 1Mb RAM Upgrade kit	£70.00
A590 2Mb RAM Upgrade kit	£135.00

RAM upgrades fitted free when bought with A590.

PHILIPS 15" FST TV/Monitor (MODEL 2530)

With its dedicated monitor input, this model combines the advantages of a high quality medium resolution monitor with the convenience of remote control Teletext TV - at an excellent low price!

- ✓ Suits ST or Amiga (cable supplied)
- ✓ Teletext facilities; on screen graphics
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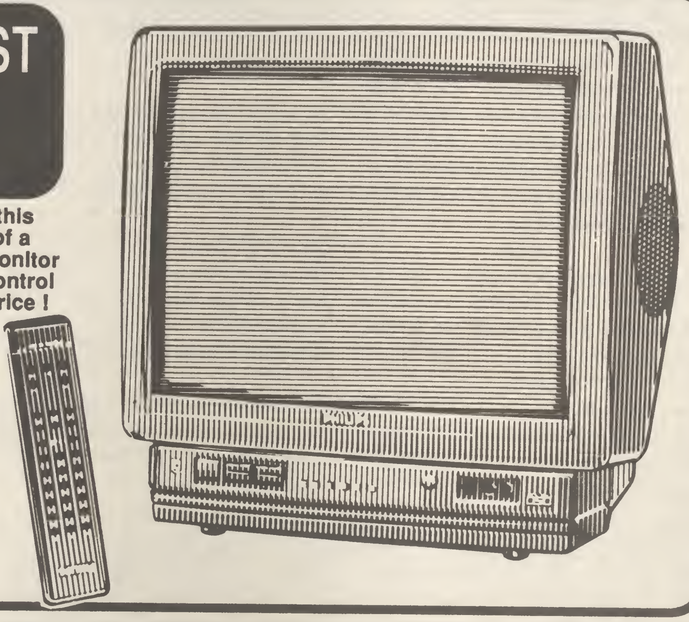

£269.00
Includes VAT, delivery and computer connection lead

ATARI ABC-286

FREE with all ABC-286 machines : Logotron '8-In-1 Professional' Inc. W/Processor, Database, Spreadsheet, Graphics, etc.

- ☆ 80286 Processor with 8 Mhz clock speed
- ☆ 640K RAM standard, expandable to 1 Mb
- ☆ 3 AT / XT compatible Expansion slots
- ☆ 1 RS232 Serial and 1 Parallel ports
- ☆ Disk controller supports 2 floppy & 2 hard drives
- ☆ One 3.5" (1.44Mb) floppy drive and a 30Mb hard disk drive fitted as standard
- ☆ Socket for 80287-8 Maths Co-Processor
- ☆ Video graphics adapter supports EGA, CGA, MDA and Hercules, with digital video port
- ☆ 102-key DIN spec. AT-Protocol keyboard
- ☆ Supplied with MS-DOS 3.3 and GW-BASIC

ABC-286 S.D./30Mb without monitor	**£ 803.85**
ABC-286 S.D./30Mb with Mono Monitor	**£ 861.35**
ABC-286 S.D./30Mb with EGA Monitor	**£976.35**

****

Optional 5.25" 1.2Mb internally fitted floppy drive available £119.00

Prices include VAT/Delivery

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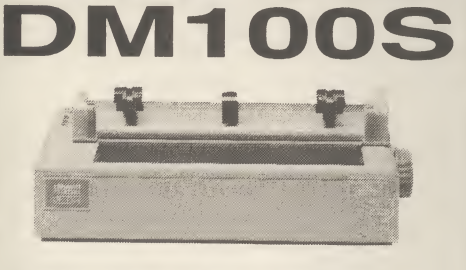

Top value, high performing 9-pin dot matrix printer

- ○ 200cps draft, 30cps NLQ print speed
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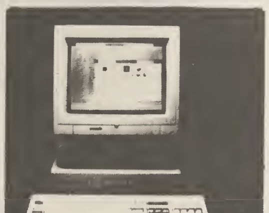
ONLY £129.95

Cut sheet feeder available for only £79.95

Prices include VAT, delivery and 12 months on-site maintenance!

olivetti PCS 86/286

FREE With All Models :
- ✓ 12 Months On-Site Maintenance
- ✓ PS2-compatible Mouse with software
- ✓ Logotron 'Eight-In-One' Integrated Package
- ✓ 'Top 10 Solid Gold' Games package



FREE WITH EVERY PCS286 : OLIVETTI DM100S 9-PIN PRINTER !
or, if you prefer, £129.95 inc.VAT allowance on another printer of your choice.

	SD	DD	SD 20MB	SD 40MB
PCS86 MONO	549.00 631.35	649.00 746.35	849.00 976.35	N/A N/A
PCS86 COLOUR	699.00 803.85	799.00 918.85	999.00 1148.85	N/A N/A
PCS286 MONO	N/A N/A	949.00 1091.35	1049.00 1206.35	1149.00 1321.35
PCS286 COLOUR	N/A N/A	1099.00 1263.85	1199.00 1378.85	1299.00 1493.85

- ◆ 101/102 key AT-layout PS/2 compatible keyboard (Mini-DIN)
- ◆ 1 x RS232 Serial interface and 1 x Centronics Parallel interface
- ◆ VGA compatible (OVC) display controller fitted standard
- ◆ VGA monitors: 14" Colour / 12" Mono. (dot pitch 0.39mm)
- ◆ Socket for Optional Maths Co-Processor
- ◆ Hard Drive versions: 20Mb (27ms access time) / 40Mb (29ms)

Logotron 'Eight-In-One' package includes Wordprocessor, Database, Spreadsheet, Graphics etc. 'Top 10 Solid Gold' games pack includes Arcade, Adventure, Creativity, Simulation & Strategy titles.

PCS 86

- ◆ NEC-V30 microprocessor 10Mhz clock speed, 0 wait states
- ◆ 640K RAM standard, upgradeable to 2.5Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 720K formatted capacity
- ◆ 3 Full size XT-compatible 8-bit expansion slots

PCS 286

- ◆ Intel 80286 microprocessor 12MHz clock speed, 1 wait states
- ◆ 1Mb RAM standard, upgradeable to 4Mb on motherboard
- ◆ Single or Twin 3.5" floppy drives with 1.44Mb formatted capacity
- ◆ 3 Full size expansion slots; 1 x 8bit and 2 x 16bit (XT/AT style)

ACCESSORIES

5.25" 1.2Mb/360K drive with controller	£129.95
PCS 286 2Mb RAM Upgrade Kit	£119.00
PCS 286 4Mb RAM Upgrade Kit	£235.00

OPENING TIME

Well now, a few nominations for the Best Two Pages in the Middle of a Weekly Computer Magazine Award have come in. We're still a little away from the final 1,000,223 votes required, but I'm sure we'll make it if we pull together.

What happened this week? The *Express* office was venue for a concerted 'Be Nice to the MSX' charity binge. Many industry figures attended, it was unfortunate that none of them actually came from the computer industry. Ms Hanks, our coffee machine operative turned out in a bijou 1970s orange, purple and electric pink pinny. Big Bob, the bald builder with the bruised b(*that's enough Bs – Ed*) from Bristol also made an appearance, told some potholing stories and fell over.

The binge was a great success but the office was a complete mess. Stuart – Sir James -Anderton, the dashing deputy editor nearly had a fit when he realised that Tarquin St John-Sprout, our office sanitation executive, had not bothered to clean the place up afterwards. There were small bits of jelly and ice cream, party streamers, and business cards everywhere. Still that's journo life.

Now for the serious bit. It has come to my attention that some readers, I'm sure it's not you, appear to think that The Centrefold is flippant in tone, trite in subject matter, and childish in humour.

Well, pal, the day I come round to your house with my mates Damien, Wayne and Steve (all of whom are ex-SAS marine, black belt ninjas) and my big brother, who is bigger than Sam Tramiel, Bob Gleadow and Alan Michael Sugar put together, then you'll really know what flippant, trite and childish really is. Now get out of this column and no you can't have your ball back.

STOP PRESS: POWERCADE

Do not take any notice of the closing date for the Powercade competition as published in last week's *Express*. The closing date is October 1 1990.

Tim Smith's CENT

Write to 30 Monmouth Street, Bath BA1 2BW

I WISH I'D SAID THAT

Have you seen, read or heard anything computer related which made you weep with whichever emotion you could muster? Have you turned at your workstation and said, "Laugh, I nearly split my pants!"

If you have, send them to I Wish I'd Said That, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW.

"The images of his worst nightmares once again turned out not to have become a horrid truth; his mighty biceps were still there for everybody – and himself – to see"
From the Dragonflight *novella.*

"The first order of business was to set some rules of play. Before this daring innovation was introduced, there were no rules."
From Grave Yardage *rule book.*

"Not only is Neo-Geo just pure entertainment..."
From the Neo-Geo publicity leaflet.

Letter Spray

Want to be mentioned in dispatches? Send your letters to: Letter Spray, 30 Monmouth Street, Bath Avon

How would you like to impress your friends down at the All Formats Fair? Get a letter printed in Letter Spray and you could be in with a chance. Send them to Letter Spray, *New Computer Express*, 30 Monmouth Street, Bath, BA1 2BW. This week's answers by The Last Great American Whale.

Sir, I felt that I had to write in order to ask your readers what they think of the new Radio 5 program, *Formula 5*? I think it's OK but it never seems to mention the CPC.
Mr S Pearce, Twyford, Hants.

Dear S P, a good friend of mine, Maff Evans by name and nature, is a regular on the program. I say, it's got good coverage, good style, fine presenters and a neat line in static. 8/10. Give it a dose of earwigging. at 8.30pm every Thursday As for the CPC, don't you get enough from us and Amstrad Action? Stop whining. And, hey, thanks for the letter, please subscribe.

Sir, Are you aware of the fact that the Macintosh computer was not named after the gentleman who invented the raincoat of the same name?
Mr N South, Stratford, London

Dear N, of course I am. Any idiot knows that the Mac was named after Steve Jobs. The Jobses had to rename themselves after landing at Ellis Island in the late 14th Century. They were originally called the MacintoshIICXs.

Sir, Are you the same Tim Smith who presents The World Service's pop program *Multitrack 1*? Did you play with The Adverts as TV Smith? And is your acting name Piggot?
Ms F M Clarke, Hillingdon

Dear F M, no, he's far too smug. No again, he's far to old. And finally no, he's far to ugly.

WIN LOADS

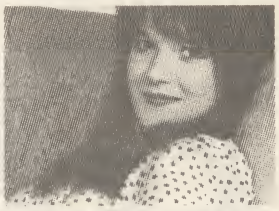
That's about as much as I'm going to say at the moment, but suffice to say there are hidden wonders to be gathered in by one lucky reader. All you have to do is to fill in the missing words in the following review of *Till Death Us Do Part*, a new adventure game from KnobSoft. Send you entries to *Oh my goodness no, not the missing word comp, New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW.

• *Quite definitely not Mr Alf *** that famous Lunnon gent. Who is this woman? Answers on a postcard...*

Till Death Us Do Part • £34.99

Alf *** is not in a good mood today. What's worse is that you get to play him and you have to get from your house in the **** End of London to West ***'s home game at Upton Park without being forced into the pub by any of your mates and without getting beaten up by irate social workers, French people, socialists or women. The initial section of the game entails finding your claret and *** scarf without which you cannot leave the house. Once this is done you have to get the number 23 *** to the ground. Plays well on the 8-bits such as the C**, the Amstrad *** and the Speccy. Doesn't come over too well on the 16-bits.

The PC versions are fine on CGA, and VGA but not on E**. A good effort from **********. 97 per cent.



READER'S CHART

This week we bring you one of the stupidest lists I have ever seen. If Patricia Murphy of Slough, Bucks, actually expects that anyone will believe that she has used this lot, then she has more front than the man who sold the Tower of London to the Yanks (whoops-a-racism, the Americans). If you have a chart, then please send it to: The Bleeding Charts Club, *New Computer Express*, 30 Monmouth Street, Bath, BA1 2BW.

THE BEST	
1) *Kung Fu in Las Vegas*	(Amsoft)
2) *Yogi Bear*	(Pirhana)
3) *Jetset Willy*	(SP)
4) *Manic Miner*	(SP)
5) *Classic Invaders*	(Supernova)
6) *Super Wonderboy*	(Exocet)
7) *Twin Turbo V8*	(Codemasters)
8) *World Cup Carnival*	(US Gold)
9) *Annals of Rome*	(PSS)
10) *Academy*	(CRL)

THE WORST	
Populous	(Bullfrog)

THE TOSH TEN

This week's chart is the Tosh Ten Sporting Events and their possible sponsors:

1) The Admirals Cup – Commodore
2) The First Test – Sir Clive Sinclair
3) The London Marathon – Acorn ... nuts geddit?
4) The 1994 World Cup – NeXt
5) The Round the World Yacht Race – Ocean
6) The World Orienteering Finals – EMAP
7) The Olympic Decathlon – Active
8) The World Leapfrog Championships – Mel Croucher
9) The British Grand Prix – Lotus
10) The World Angling Finals – Micronet

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TREFOLD

Tale Spin: Stories from the other side

Now then, then now. Computer-based stories seem to come in two forms: funny, as in "Blimmin' blimey, did that guy really think that he could run an *ST Format* cover disk on his PC?" or frightening, "What do you mean that the CIB computer really declared the entire population of Des Moines, Iowa, dead, and ordered the city's destruction, well I'll be jiggered!" Why are there no romantic computer-based stories? Where are the adventurous ones? A prize for the first story to make me reach for the hanky.

THE SHOW GOES ON AND ON

The further away from the CES show we get, the more the stories emerge. How about the one about the massive Ocean stand? Arcade machines all over the place one minute, the next minute there are security guards dashing towards it as if a mass riot had erupted. It wasn't a riot, nope, the *Special Criminal Investigation* machine had decided that it was sick to death of being punched mauled and generally mussed with. So it exploded.

THE SHOW GOES ON AND ON AND ON

Betty Boo and Boomania were there. Her hair twice as black as on video, and her voice exactly the same; dammit she was miming. If only the same thing could have been said for the people who decided to get up for the karaoke session. I thought it was test music for *Shadow of the Filthy Beast I.*

AND ON AND ON AND ON

What do you get if you put five journos in a lift at 3am after a free drinks bash at the Kensington Roof Gardens? Nope, not a great new idea for a magazine. Surprisingly, not a fight. Yes, a broken lift. My contacts tell me that by the time rescue reached the hapless crew, they were already telling each other things like "I've always loved you", "If you get out and I don't, just make sure that Agatha is looked after", and," Did anyone bring a bottle opener?". They were only there for three minutes.

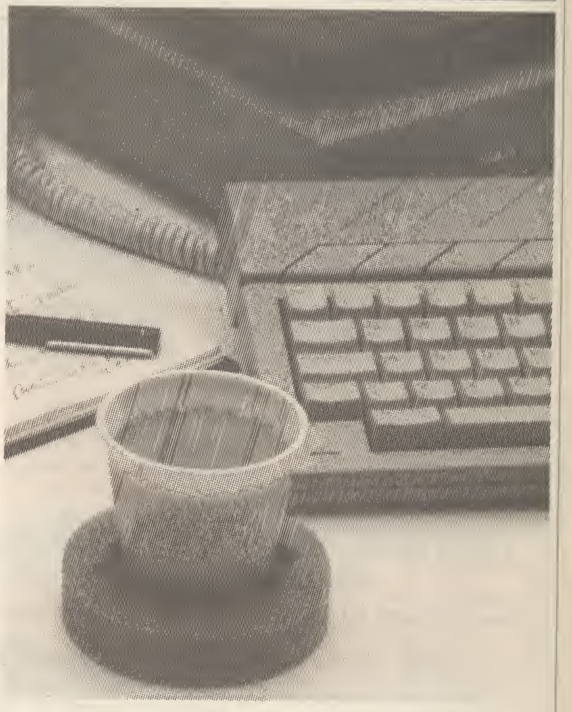
AND YET AGAIN ON

Less of a story and more of a mini-comp. Did anyone see an ST at the show?

A CALL TO US

Here's a cry for help rather than a tale. If any of the following people, who we know are more than likely reading this issue of *Express,* would like to get into contact, we would like to talk to you. We offer a prize for any information received. So, are there any members of Kraftwerk, Depeche Mode, Suicide, Tangerine Dream, Ultravox or New Order out there? If so you should write to 'I'm Really Really Famous and Claim My Centrefold Interview Compo' at the usual address. If you know any of these people, write as well, the prize is yours.

CAPTION FULL STRENGTH



The picture printed above is frankly, well, not to put too fine a point on it, if you see what I mean, it's boring. Too prove that you are less boring, I would like a caption to liven it up. And yes that does mean you, Mrs R Foulkes of Harpenden.

If nothing witty comes in I will be forced to send signed photographs of the entire Express team (except for myself) to every reader we have on our lists.

Remember what they said at the Joan Junor school of journalism: " Avoid clichés like the plague lads and gels." Originality is the key to winning this one. The shorter, pithier and more hilarious the better. I'm talking Dorothy Parker, Oscar Wilde, George Bernard Shaw, you get the picture.... geddit?

The prize? Well you tell me. As long as it doesn't cost more than £24.99 it's yours, unless that it is I change my mind.

Send all entries to Caption Full Strength, New Computer Express, 30 *Monmouth Street, Bath, Avon BA1 2BW.*

FROM THE ARCHIVE

One year ago this week may seem like a short time but can you remember the computer about which rumours of its death were greatly exaggerated? Which firm was scarred by criticism of its portfolio? And which show ran into trouble? *Express* reported it, and Archive answers the questions.

DEATH WARMED UP

Rumours had been rife that Amstrad was going to scrap the much revered CPC line. *Express* headlined its piece "CPC's Death is Nonsense". Malcolm Miller of Amstrad rather short-sightedly commented:"We're continuing to manufacture the CPC. That's all there is to it." That certainly wasn't all there was to it as the new CPC Plus range plainly shows.

ATARI! BLESS YOU.

Yes, it was Atari that well loved mega-corp, which produced the £599 286 PC. "The firm wants to attract a new breed of computer user hoping to skip the ageing 8086 PCs for faster 286 machines" was the comment. The Atari ABC286 came with 1Mb of memory, one 3.5-inch drive, three expansion ports. An EGA screen would have cost you another ton, and a 30Mb hard drive added 300 notes. Commenting on the fact that Atari had not previously announced the machine, Bob Gleadow, Atari's UK boss said:"We've come in for a lot of criticism for talking about products before they arrive. We're learning from Portfolio experience. We previewed that and people started asking where this lead was or that add on. It scarred us."

DATACRIME 1989

The latest virus threat to be heralded with all fitting doom and outcry was Datacrime. It was due to kick into gear October 12 – keep an eye out for it this year by the way. The Computer Users Forum, "a prominent user group" warned of a "media circus" concerning the event: "The quacks panic millions of computer users", CUF chairman (yes he is a man so we can use the word) Shahid Parvez told the media all of whom were dressed in bald-head wigs, outsized boots, red noses (so what's new) and were throwing custard pies.

SHOW OFF

Ah yes, the then forthcoming1990 PC show run by Montbuild and publisher VNU looked like it was heading for trouble. Neither side were to pleased with the other, and VNU went as far as slapping a five million pound lawsuit on Montbuild alleging breach of contract. To add to the misery, EMAP announced that it would be staging a show in 1990, to be held at Earl's Court. It was all rather fraught, but I'd better not say anymore – I couldn't afford a £50 suit let alone a £5m lawsuit, so EMAP, VNU, and Montbuild are all lovely people. Anyone go to the PC show this year?

SHOW ON

Meanwhile the 1989 PC show was reported by an excitable, if not excited, *Express* team which included Maff Evans, star of radio and radio. Here are some snippets: "Amstrad's gaudy stand looked like a poor attempt to recreate Gerry Anderson's world of Supermarionation.", "It [Commodore] launched the *Batman* pack for the Amiga","Howard Fisher [of Locomotive Software] may have left you convinced that it's [*LocoScript PC*] the greatest piece of software on God's earth", "Walters was showing off its new 32-bit 386 PCs", "Apparently under a great deal of pressure was the team on the Hewson stand, since the main PR person was back at the hotel rather unwell."

That's it. See you next week last year.

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SOUND EXPRESS STEREO SAMPLING HARDWARE AMIGA £29.99

AMIGA MEGA DEALS!!!

FREE HOLIDAY ACCOMMODATION

For two people Voucher with every Machine Purchase.
Resorts available are Florida, Majorca, Malta, and Southern Spain.

AMIGA A500 BAT GAMES PACK

£399 inc VAT & next day courier

BAT Games Pack Includes:

- ★ 10 free Games Inc. Blasteroids, Wizball, Menace, Buggy Boy.
- ★ Amiga A500 512K Keyboard with built in 1 Megabyte Disk Drive
- ★ Free TV Modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ DELUXE PAINT 11 GRAPHICS PACKAGE.
- ★ FREE only just released BATMAN - THE MOVIE games software
- ★ NEW ZEALAND STORY arcade games software.
- ★ F16 INTERCEPTOR - amazing 3D flight simulator software.
- ★ FREE JOYSTICK, MOUSE MAT AND 10 BLANK DISKS.
- ★ AMIGA BASIC Amiga EXTRAS 1.3 Workbench 1.3 PLUS the Amiga Step by Step Tutorial.
- ★ All leads manuals PLUS MOUSE and Mainsplug!

£419 MICROSMART A500 + PSYGNOSIS PROMOTIONAL PACK

Blood Money, Infestation, Menace, Baal, Chronoquest1 + 2, Never Mind

AND EVERYTHING IN THE BATMAN PACK.

£399 MICROSMART SOUND & VISION A500 PACK INCLUDING:

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AMSTRAD 464, colour monitor. DDI disk drive, DMPI printer, many games etc. £300. Phone (0793) 871094 (Swindon).

MSX TOSHIBA HX10 computer. 4 Konami cartridges, well over 100 games, all leads, manuals, 2 joysticks, bargain at £75. Phone (0234) 54386 after 6pm.

TWO ZX MDrives 16K RAM I/F1 MGT two face +D, offers. G M Chapman, 14 The Wynd, Renishaw, Sheffield, S31 9WL.

BOURNEMOUTH area. Help wanted with Amiga programming, CLI etc. 0202 485730 after 6pm and weekends. Also 24 pin printer wanted.

HELP wanted for Bard's Tale. I'm stuck in Kylearan's tower. I need maps and tips to take me further. Call for Paul after 6.30pm. 091 297 0541.

WANTED Hunt for Red October for Commodore C64. Must be original disk. May swap. Phone Graham on 0670 856886.

COMMODORE CBM 8096. Any software or books on this and CBM 4032 may help me. Ring 0703 448893 if you have for reasonable price.

AMSTRAD 6128 with colour monitor, joystick and games for £250 ono. Tel (0582) 492069.

ATARI ST hisoft C interpreter worth £50. Unwanted competition prize, £35 ono. Phone (0253) 823353 between 5.30 and 6.00 pm, weekdays.

DO YOU own a Spectrum and a Swiftdisk interface? If so would you contact Gary Bennett, 26 May Terrace, Lipsom, Plymouth, Devon, PL4 8PP.

AMIGA software for sale. New Zealand story, as new, mint condition, £7. Kindwords V2-0 word processor, £25. Tel (0636) 71275.

SERIAL board for Epson printers 8K memory, £40 or swap for Amiga external disk drive or memory expansion. 051 424 1572.

COMMODORE 128, 1571 disk drive, MPS1000 Epson-compatible printer plus S/W and more, £300. Will split. Phone 041 427 1886 after 6pm for info.

PHILIPS NMS8245 MSX2 computer, modem, mouse, DSDD, joystick, datarecorder. Business, games, PD, comms disks, boxed, manuals. £245. 0642 564932.

WANTED multiface +2A Spectrum, will swap for games, Bomber, Prostealthfighter, Harddrivin, Rambo2, Empire Strikes Back, all excellent condition. Write to Mr K Bloor, 24 Hollins Crescent, Butt Lane, Kidsgrove, S-O-T, ST7 1JX.

CBM64C for sale C2N, £200 software manual, powerpack, mags, worth £200, sell for £75 ono. Phone 081 505 7155 (after 6pm). Hurry! Ask for Matthew.

SPECTRUM software DTP (PCG) plus extra fonts £30. Artist II £7, Tasword £7, Tascalc £7, Protitler £10. Also Romantic Robot videoface £20 and Tasman interface £15. D Harper, 12 Western Drive, Leyland, Lancs. 0772 424263.

CUSTOMISED programs written for Atari ST owners. Contact Allan Burns, 61 Coniston Road, Gunthorpe, Peterborough, PE4 6UL.

DYSLEXIA specific education software needed for kids aged 9 and 12. Also interactive keyboard skills tutor for A500. Contact Bob 081 942 7391.

AMIGA 500, 1 meg, 1084 monitor, 2nd disk drive, control centre, new mouse and mat, loads of software inc Amos, only £550. Phone 0643 707159.

SHEFFIELD'S alternative solution BBS 0742 325232. V21/22/22BIS/32/14.4K HST 8N1 24 hrs. Apricot F1 720K floppy drive wanted. Why?

NEW Amiga user needs cheap games advice and contacts. All help much appreciated. 41 Springmill Street, Bradford BD5 7EE.

ATARI 1/2 meg internal drive. Hardly used £20 or will swap for software. Tel 081 310 0640. Buyer collects.

SPECTRUM+ £35. Spectrum+ with PSU leads etc £50. Spectrun+ 2A, PSU £80. QL JMROM £60. Serial 8056 printer £30. Brother 1009 £60. Tel 0282 51854.

COMMODORE 64, light fantastic pack, £40 of software for £220. Swap for Atari ST or SAM coupe with new ROM. Buyer/swapper collects. Robert Burns, 20 Ferry Street, Ardwick, Manchester M11 3PN.

PUBLIC house BBS, 0222 221168, 24 hours. Supports Amiga and PC. Many files online, plus online games, "Fido" Echomail - over 25 areas supported.

A COURIER HST 19200 baud rate modem, must be 100% working. Contact me now!! Also Amiga contax wanted!! Tahir, 134 Bellingdon Rd, Chesham, Bucks, HP5 2HF.

SPECTRUM items. 3 channel sound synthesiser and sound amplifier £12. Timex 2040 printer with paper £30. The last word £4. Tel 0258 880394.

SPECTRUM 48K with many games £50 - tel Bristol 716618.

ACORN electron with games, in new condition, still in box £70 - tel Bristol 716618.

DYSLEXIA specific education software needed for kids aged 9 and 12. Also interactive keyboard skills tutor for A500. Contact Bob 081 942 7391.

WANTED VIC 20 tape recorder and/or games. Will swap for Sharp pocket computer or cash negotiable. 21 Whitehorse Street, Hereford HR4 0EP.

COMIC setter (Amiga) E25, great for the kiddies. Phone Mark on 0442 864234 after 6pm.

C64 TAPE games for sale, starting at 50p. Write to me at 125 Alexandra Street, Kirkby in Ashfield, Notts. for list (all originals only).

SEGA master system with joy pad, 3 DG casses, light phaser, over £400 of games includes R-type, all boxed, sell for £220. Ring 0562 850591.

EPSON MX-80 printer manual required. Buy or borrow. Reasonable price or postage paid. Tel: Nottm (0602) 289608 after 6.30 pm.

PORTFOLIO Atari/Dip, good condition only. Name your price! 025126-4962.

INFOCOM adventures - several originals for ST, IBM, CPC/PCW. Reasonable prices, send SAE for details to Jim Fitchie, West Flat 28 North Bridge, Edinburgh, EH1 1QG. Tel 031 225 5204.

VIDI-AMIGA for sale, excellent condition, fabulous digitizer with all necessary leads, £75. Telephone (0472) 824516.

SPECTRUM software 10 games including cybernoid carrier command Rtype plus Tasword. £15 the lot. Call Lee 081-503 1465.

ATARI 520ST 1 meg diskdrive, joystick, software. All boxed, manuals £225. Waterlooville 0705 257765, near Portsmouth.

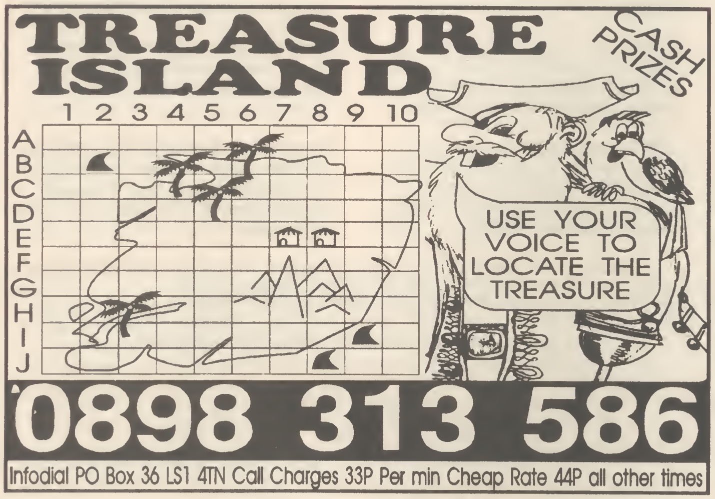
AMIGA originals for sale, £5.00 each. Turbo Outrun, Ghouls and Ghosts, Amiga Karate, Barbarian (Palace), Barbarian (Psygnosis) and many more. Phone Neil on Norwich 260172.

100+ DISK public domain library (ST) for sale. Offers over £70. Phone Peter on 031 441 7952 after 6pm.

GENOA SUPER EGA B10S 2.41 wanted - manual or information. Offers to J Raskowski, PO Box 878, Holloway, London, N7 8XY.

COMMODORE music expansion system for C64. Five octave keyboard FM expander. Sound studio and original software. All in original box. £35. (Chester) 0244 851066.

ACORN Electron. Data recorder. Tapes, manuals, PU. Cheap for quick sale, £20. 0293 32461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SPECTRUM +2. £2000 of software including 2 joysticks, books and cases for holding the games. £550 ono. Contact Stef (0255) 860423 (Essex).

ATARI portfolio, 32K RAM card, printer interface and lead. Complete with manuals. £200 ono. Phone Howard after 6pm on 0532 673959.

SEGA megadrive, three games, two joypads, only £180 or will swap for Amiga A500, no games required. Phone 0268 683250 and ask for Glenn.

WANTED Atari ST replay pro and vidi-ST digitiser. Cash or software. Please write, Steve, No 1, Bleachfield House, Thurso, Caithness, KW14 8QW.

DOLAN XT turbo 102 keyboard monitor, 360K and 1.2MB drives GEM, DRD0Z, all as new. £450 ono inc delivery. Tel Sapcote (045527) 3053.

WANTED urgently, Barbarian II for the Amiga in swap for Rainbow Islands. Contact Gavin on 928 1488 between 5pm - 8pm.

+3 SPECTRUM with Kempston and 3 joysticks and £200 worth of games. All are new games. Cost £250. Phone Anuar after 6pm. 071 636 4801.

MEGA DRIVE for sale with four games. Worth £360, sell for £220 or swap for Amiga A500. Contact Stuart on (0223) 323212 after 4pm.

55 WORLD Soccer magazines and 38 computer magazines, mainly The Home Computer Course 1983, lot of Spectrum and QL items. 41, Springmill Street, Bradford, BD5 7EE.

SPECTRUM +2 action pack, light gun, plus 6 action games, free dust cover, 128k, calculator, B+ Basic, and 48k, plus 10 Mega games, free 3 £9.99 games, only £130. Tel Aylesbury 88682.

BBC B Software for sale. Over 30 original titles incl Elite, Castle and All Ultimate. £50 or split. 0443 832858 (eves).

ATARI STE upgrades 520 - 1040 upgrade boards. 2 sets £25 each including postage. Phone Jim at 0232 794812 home or 0232 241573 work.

ATARI 800XL with data cassette, joystick and 60 original titles (20 full price) £90 ono. 0443 832858 (eves).

AMIGA A590 hard drive 20 meg plus 1 meg RAM, quarterback software and hard drive system discs. £350. Tel 0353 723513.

ATARI ST software, all originals, sell the lot for £45. Also ST multiface £35. 04024 57507.

TATUNG Einstein, twin drives, 80-col card, BBC basic, logo, word processor spreadsheet, database, C-compiler Z80 assembler. Games, books, PD software, approx 40 3 inch discs. £75. 0353 723513.

TATUNG colour monitor 14 inch, good condition, accepts RGB/YUV linear and RGB TTL signals. £100. 0353 723513.

DEMON modem 300/300 1200/75 75/1200 works but requires software for computer, only £40. 0353 723313.

AMIGA A500 plus games (all original) include Batman, F29, F16 combat pilot, Laser squat, Photon paint etc. Bargain £295. Phone 051 727 1426. Ask for Eddie.

SEGA mega drive inc. Thunder Force 3 and Ghosts and Gouls. Hardly used. £80. Tel 805 8669 and ask for Robert.

SEGA megadrive, PAL/SCART output. Still boxed, extra joypad, four games inc. Eswat, Forgotten Worlds, excellent condition, hardly used. £280 ono. Tel 091 518 1464.

Z88 COMPUTER, 128k RAM, 128k Eprom, Z-tape and leads, mains adaptor, printer interface, Z88 mags. Boxed as new. Worth around £400. Sell £275. Horley (0293) 820502.

EPSON PC +/HD manual circuit diagrams or workshop manuals. Also same for FX80 printer. Phone Lou 05436 3090.

ATARI 1040 STFM £300. CM8833 £190. Mono monitor £85. External ST drive £60. LC10 printer £125. Lots of software. Phone Roger on 076 886 200.

APRICOT FIE, MS-DOS 256k memory green monitor, single disk drive with software, word processor etc. Phone after 5pm, Swansea 0792 581524.

APRICOT technical manuals and software wanted for PC/Xi, F2, FIE. Also upgrades for same, drives ramcards, internal modem etc. Phone after 5pm, Swansea 0792 581524.

WANTED for my ST. Headcoach, also 3 in 1 football. If you have them, then phone Kevin on 0724 842531.

MODEM plus software for CPC 6128 for disabled user. Must be cheap. Can collect any distance. Geoff, 8 Markland Crescent, Clowne, S43 4NG.

ATARI ST software. Spreadsheet and database originals complete required. Roy (0252) 24461, ext 3660.

SPECTRUM+2 many games, video digitiser, joystick, mouse, system plus Artist2 manual, still boxed. Sell the lot £120 ono. Tel 0709 863427.

SPECTRUM 128 + 2, with VTX5000 modem, joystick, Kempston and Sinclair interfaces. Over £400 worth of software. Complete with manuals. VGC, £175 ono. Phone Winchester (0962) 881426.

BOOKS for many micros, also chess books for sale. Jones, 2 Town Mead, Oakford, Devon, EX16 9EW. Also got lots of software for Spectrum and CPC.

ATARI SLM 804 laser printer, perfect condition, Epson emulator, £550. Tony 081 690 7106.

ATARI 520 STFM 1 meg drive, £600 of latest software plus superpack, joysticks, mouse and mat, mags, coverdisks, dustcover, manual, leads. Excellent condition £350 ono. Robert, 081 886 2503.

GENISCAN GS-4500 hand scanner for IBM with OCR and paint software. Almost new, £120 ono. 0903 210152 after 6.00pm.

C64C with 1541II d/d. Games include Rocket Ranger, Space Rogue and lots more. 8 months old. Phone 061 775 1004, ask for Danny, after 6.30pm.

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SPECTRUM plus 48k (plus leads) with Timex 2040 printer (with paper), joystick and 56 games. Excellent condition. Worth over £250. £50 ono. Telephone (0394) 275011.

TAITO Space Invaders arcade machine - the classic machine that started it all! Excellent condition, buyer collects. £150. 061 653 1552 (North Manchester).

BBC 'B' colour monitor, disk drives, software, books, worth £750, sell £250. Phone 051 547 3747.

IS There a C User Group Out There For The ST If you Know Of One Phone Shane on 0638 665194

CALLING all local user groups. If your Group includes Atari users, please contacct the Association of Atari User Group.s 45 Coleburn Road, Norwick, NR1 2NZ

TI99/4A User Group U.K. Magazine Software & Support. Member Secretary: Peter Walker, 24 Bacons Drive, Cuffley, Potters Bar, Herts, EN6 4DU

SAM Coupe newsletter starts September for a 6 month subscription (twelve issues), send £8 P.O. payable to: R. Stirling 23 Mayfield Street, Glasgow G20 9RQ. Subscribe right now!

HELP wanted to connect spectrum +3 to Casio FX-850P personal computer using RS 232 Tel: (0324) 712505 after 7.00pm.

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HELP! Anyone got any information about programming the Archimedes VID registers? Contact: Stuart Tyrrell, 2 Woodside Avenue, Moss Bank, St. Helens, Merseyside WA11 7BS.

SIMON Hardy contact Martin Ellerker from P.W.S. before 18th September. Write to me at 22 Orchard Lane, Woodnewton, Petersborough, PE8 5EE.

SPECTRUM plus three owner seeks penpals all ages females welcomed guaranteed 100% reply contact Darren, 16 Four Winds Road, Dudley, West Midlands DY2 8BY.

MODEM Dowty Quattro. Boxed, manual fully working original cost £795 auto dial auto answer sell for £300.

THANKS. Fellow Atarian for the 8 bit stuff. Graham Bilston.

DO you own a Spectrum and a Swiftdisc interface. If so please contact Gary Bennett to exchange hints and tips etc.

WORDSTAR release 1.OA help can anyone tell how to print files more than one at a time. Heton, Burnt Hills, Thick Hollins Meltham Huddersfield HD7 3D8.

HELP anyone know the address or telephone of Shugart please phone Nigel 0293 (Crawley) 513354 anytime.

WANTED user manual for Citizem 120D printer. Tel (0925) 227142 and ask for Phil.

ST/E contacts wanted into games midi synths Medway Dompey Automation to swap programs phone (071) 4852012 or 46 Twisden Road, London NW5 IDN BEN.

2400 Moden external wanted - must be BT approved and Hayes compatible will offer £550 of ST Software and 1200/1200 modem: Rob, 7 Powis Grove, Kenilworth, Warks.

SAM Coupe public domain wanted for new and growing library all disks/tapes returned if with S.A.E. send to B. Atkinson, 60 Cobourg Street, London NW1 2HB.

MEGA drive carts wanted. Will pay £15 each. Write to Kenny 62 Carrol Cr., Ormskirk, Lancs. L39 1PZ.

SPECTRUM +D disk drive interface manual needed. Also spectrum 48K elite with all manuals. Specturm 48k+ needed with tape recorder phone Simon at 0705 750483.

MODEM and midi interface wanted for the Amiga I'll pay up to £65 for modem and £15 for interface: Spyros 14 Aristovoulou Street, P.S. 246, Limassol, Cyprus.

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HOW do you connect a SCSI hard drive to an Amiga without an A590? Any ideas ring Mike on 0889 574070.

WANTED Atari SC1224 and/or SM124 monitors in good condition tel: 0469 60009.

WANTED for C64 disk "Hunt for Red October" must be original must have manual £15 waiting.

FREEZE machine utility disk V3.0 or later for C64. 64 Ashbury Avenue, Bangor Co. Down N. Ireland BT19 2TH.

MUSIC X - Wanted a manual for the Music X complete package also any IFF samples for the Amiga also cheap software for sale - Mike 0742 686977.

ACID music for Amiga wanted and graphic. Disks returned with extra blank free. Only new stuff to: Steve, 26 Reeve Road, Holy Port, Maidenhead, Berks, SL6 2LS.

WANTED does anybody have an Expson FX80 printer manual. Please ring 0992 467398 and ask for Franco.

COUPE Crazy Do Library Wants Your: Demo's Utilities, Business Programs Games etc. Send Them To Coupe Crazy, 7 Thornton Road, Higher Bebington Wirrac Merseyside L63 5PN

QL software, games or business also any blank micro cassettes to help in resurecting mothballed Sinclair QIL - phone Steve 0535 274414 evenings.

AMIGA hard drive wanted - call Simon at 0705 750483, or write to Simon Brown, 82 Highland Road, Southsea, Portsmouth, Hants, PO4 9NF.

WANTED music X for Amiga. Also wanted Synth module to complete midi setup. Also HWTS/tips for Music X call Paul (0242) 236428 or write Flat 1, 2 Bayshill Road, Cheltenham.

IS there a C user group out there? If so phone Shane on 0638 665194. Also Lattice C V3 wanted. for the Atari ST please.

C64 help! Micro mud program and data discs wanted to buy, hire or loan. Mine are damaged. TimProctor 12 Judilee Drive, Thornbury, Avon B512 2YG.

HELP wanted: does anyone know anything about a Sirius computer? DOS and manuals require will pay reasonable price - contact Paul on 08244 432.

WANTED: Rainbird's Advance Music System for Amstrad CPC and help on direct screen memory accessing in M.C. (pixel scrolling, collision, detection etc.) Nick, 7 Hawkswood Avenue, Frimley, Camberley, Surrey GU16 5LH.

WANTED Scart Sega Megadrive will swap for a Pal version or sell for £140 - phone Peter 0602 299435.

AMIGA A500 wanted. Must be in good working order. Software not essential. Pay around £200 depending on software. Tel Leeds (0532) 871971 after 6.00pm.

WANTED 3 and a half inch external disk drive with built in PSU for Amiga. Must be good condition - cash waiting. Tel Gary on 0473 713715 between 6-9pm.

BROKEN Amiga A500 wanted to attempt repair of mine. Any condition considered or any accessories. Call Bill 081 3015538 evens.

AMIGA A1060 Sidecar System disk wanted. Also any help and tips greatly appreciated. Tony Redcar (0642) 470144.

WANTED: Amiga hard drive any size will swap 2 second disk drives and loads of new original software. Ring Jason after 6.00pm anyday 0782 266964.

AMSTRAD PC2086 50 mono plus Epson LQ400 or similar combination for a start in computing write. Mr. W. Clelland, 130 Alexander Ave., Twelchar, Kilsyth, Glasgow G65 9RJ.

WANTED: Batman the movie for Atari 520 STFM will swap Batman the Movie for Amiga - phone (0706) 522354 from 6.00pm onwards.

WANTED PSION MC400 will pay cash on delivery - phone Mr. Jabbar 0742 472411.

WANTED 3 and a half inch external disk drive with own PSU for Amiga and on/off switch etc. Cash waiting tel: 0473 713715 after 6.00pm. Ask for Gary.

DISABLED Amiga owner with limited budjet would like any donations of demos or software, anything appreciated. Contact John 86 Prince Street, Pleck, Walsall, W52 9JH. Thank you.

AMIGA A1060 Sidecar system disk wanted. How do you get DFO to talk to JF:z:??? - Tony Redcar 470144.

WANTED ST or Amiga mouse must be cheap, working or not working. Tel Basildon Essex (0268) 417775 evenings.

AMIGA swap DWC point 2 and Voyager (brand new) and escape from robot monsters for Photon Point 2 - contact Nik 092576 4907. Also contacts wanted for Amiga.

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WANTED by O.A.P. hard disc drive for BBC Master 128K. Also 512K upgrade must be good and low priced. Webster, 6 Landing Close, Barlby, Selby, N. Yorks.

WANTED: All issues of TV gamer - Phone R. Back-Holzer, 52 Pinehill Road, Crowthorne, RG11 7JR.

HELP please anyone have a copy or Mercenary for sale. If so contact Darren on St. Albans (0727) 35249 after 6.30pm. No copies please.

WANTED: Any details for G.E.C. Information Systems Modems, Manuals or specifications if possible. Contact Stuart Nicolls, 20 Linnburn Road, Longton. S-O-Y, Staffs, ST3 5RW. Tel: 0782 323329.

WANTED infor on CBM modem specially circuit. Phone Nigel 0293 (Crawley) 513354.

AMIGA wanted swap for Atari 1040STFM, 2nd. drive, £1000 games. All boxed. 1 yr old. For more details cotact Sharkey 0476 76979 or will sell at £600.

AMIGA quick swap PD Scheme. Sned disks containing any PD, State Preference and I'll send something different back. Him Blackier, 17 Bellevue Terrace, Lancaster LA1 4TX.

ATARI SM124 Mono Minitor pay £50-£70. Tel: 0763 87286.

AMIGA computer etc., will pay above or below £250 depending on extras. Delivery needed to the Eccleshill area at Bradford. Ring Stuart (0274) 635212.

PLEASE help info on Olivetti computer LIM20 ST printer DM5055 any manuals. 5 and a quarter inch discs will pay even boot up disc. Smyth, 3 Fleming Drive, Newark, Notts.

WANTED ST. contact send list to Thuan at 14 Deepmoor Road Stechford, Birmingham B33 8ET. 101% replay.

COMMODORE modem - best offer or exchange for original disc programs with manuals - wanted - manual/copy for Seikosha printer SP180 VC. Please phone 021 444 6460.

STOCK control program wanted for Amiga 500 must be able to zero stock levels and free stock coding up to 15 characters - Paul 0332 760353.

LOGO wanted for Atari ST 081 3405231.

OLIVETTI LI M20 St computer 5 and a quarter inch discs DM5055 printer any information please. I have no manuals or bootup disc - any help gratefully received. Newmark (0636) 702196.

PHILIPS MSX2 8280 computer and software wanted urgently. Good price offered. Tel Douglas 0292 79136.

ANYONE using Star STX80 thermal printer and willing to lend me the manual? I need codes for underline etc. or else please send large hammer. Contact 0524 418806.

DISABLED pensioner requires 1751 or other disk drive reasonable price please, plus postage. Urgent. All replied. Utilities (disk cartridge) speech synethiser. K. Washbourne, 29 Lynworth Court, Cheltenham.

WANTED Formation soccer for PC engine pay £25-£30. Also Amiga games for sale old and new. Ring Ed for details 0308 68100.

SWAP my commodore 4022 printer for Amstrad MP2 modulator or Commodore C64 plus games spare PSU etc. for 464/664 monitor (green or color) Genuine replies only. Geoff Willett, 45a Weir Pond Road, Rochford Essex S54 1AH.

WANTED: SEE-KA of Assiah and Kentilla. Originals only. Good prices paid. Contact: J. Wells, 9 de grey Road, King's Lynn, Norfolk, PE30 4PH.

WANTED: MUD for C64. Must be whole package inc. MUD book. Good price paid. Contact M. Smith, 3 Frent Way, King;s Lynn, Norfolk PE30 2LU.

DESPERATELY wanted copy of Skweek for Amiga. Cash paid. Please help! Contact Peter 0532 860969.

MEGADRIVE wanted golden-axe shinobi NZ story Tatsujw. I have forgotten worlds and super hang-on. Swap one for one or all four for 14 Amiga originals. 061 6205350.

ENTHUSIAST RUN ATARI ST PD LIBRARY. Hundreds of disks to swap or sell. For details of disk-based catalogue phone Fraser on 031-553 2356 after 5pm.

ATARI ST data cables to connect serial or parallel printers and modems, excellent quality. Contact Gary on 0532-701760 evenings only please.

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OWN A CPC464? Then write to DEC Soft PD, 175 Barnsley Road, Barnsley, South Yorkshire. Enclose a blank tape +25p to receive a starter pack - PD newsletter and list of games. Free gift to the first 50!

DISK MAG for Amiga fanatics. Send submission disk to Philip Swan, 24 Shyshack Lane, Basinghurst, Basingstoke, Hants. Blanks returned as blanks. Please also send SAE.

JOIN NOW - The 16-bit Exchange Club. Free membership! Only £1.50 per swap. Send SAE to Russ, 4 Sandown Road, West Malling, Kent, ME19 6NS.

GOODBYE to everyone I used to know on teh St. I am now getting an Amiga Dal Snuffs - I will be in contact soon. Matthew.

DREAMERS Vol 1 Disk. Packed with news, reviews, tips. Pd software and must more only £2. Send to: Paul Harthen, 43 Boyds Walk, Dukinfield, Cheshire 5K16 4AX.

IBM PS/2 model 55 60mb hard disk drive, plus Canon LBP8MK3 laser printer available for rental - phone Mark 0225 314796.

PD software at 25p. if you supply the disks with SAE or free if you swap PD that I don't have. Phone (0705) 462140 for details.

STING Public Domain Library, for Atari ST. send an SAE for your free disk catalogue to: 32 Whitefield Square, Westvale, Kirkby, Liverpool, L32 0UT.

X-COPY 3 Tetra copier (play Tetris white copying) and loads more utilities: send £1.50 and SAE to Philip, 24 Shyshack Lane, Baughaurst, Basingstoke, Hants, RG26 5NH.

HEY all Amiga users!! New PD Library starting up with demos, Utils, Fish etc. SAE for list to R & G PD, 23 Melmount Gons, Strabane, Co. Tyrone, N.F.

I AM setting up an Amiga Amax user group called Emulate! with a monthly newsletter. Write to Pat, 126 Northbrooks, Harlow, Essex for more details.

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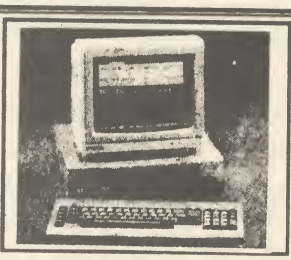

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ATARI ST USER June 89 - June 90 £5 (No cover disks). ST World Sept 89, Dec 89 - March 90 - £2. If interested please phone Philip on 0242-251556 between 5pm-8pm.

SMARTWARE II Brand new, complete with all manuals, on 5.25" disks best integrated package money can buy. Only £250. Tel. 0323-893294

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AMIGA A500 half meg expansion with clock plus second drive, Star LC10 printer and lots of disks and accessories £590 ono. Tel. Bruce on 0476-85627

AMIGA power supply, Commocore brand, full working condition £25 including p&p. Phone Barry 0438-365188 after 6pm.

ATARI 520ST 1Mb drive, mouse, software, manuals. Unused £280 ono. Tel. 0767-680253 evenings.

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AMIGA ACTION REPLAY cartridge, new, boxed, £45. Freezes monitor etc. First cheque gets cartridge, late ones returned. Send to J S Smith, 45 Maplecroft Crescent, Sheffield, S9 1DN.

COMMODORE 8023P printer with manual. £135 ono. Tel. 021-358 5418 after 6.30pm weekdays.

ATARI 1040 SM124 Loads of software £375 ono. plus brand new SM124 £75 and clock card £18. Tel. 0902-772141 ask for Pete.

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CONSOLE ZONE

Your weekly guide to the world of console gaming with Richard Frederick

SEGA MASTER SYSTEM

Populous, the smash-hit arcade strategy game from Electronic Arts, is being converted over to the Sega Master System. A new label called Tecmagik has been set up to initially produce four games on Sega's 8-bit console, including *Pacmania* (Namco's multi-maze sequel to *Pacman*) and *Shadow of the Beast* (the stunning parallax-scrolling Amiga demo from Psygnosis). *Populous* is due to be released in spring 1991, the other three titles will follow in the autumn.

PLAYING TIP

Get Rastan 'continues' for the rest of your life by: holding down [Button 1], [Button 2] and [Diagonal Left] during the Sega logo sequence.

MORE SEGA NEWS ON PAGE 9

ATARI VCS

Atari has recently launched five new games on the Atari 7800 VCS console: *Meltdown*, *Motopsycho*, *Ikari Warriors*, *Basket Brawl* and *Mat Mania Challenge*.

***Meltdown* is a game for one or two players. A gang of international terrorists have sabotaged a number of nuclear reactors and introduced deadly 'sparkx' into them. If these reach the fuel rods at the centre, there will be a major meltdown. Players must eliminate the 'sparkx' with specially engineered guns and, "save the world from annihilation". Racing against the clock, *Motorpsycho* has the "hardest, dirtiest, meanest" course ever. There are no rules in *Basket Brawl*, even the referee – Scott 'the blade' Savage – throws knives at the players. *Mat Mania Challenge* is a wrestling simulation and *Ikari Warriors* is a vertical-scrolling shoot-'em-up coin-op conversion.**

Apparently Atari has an international installed base of over 1.5 million console users and there are over 300 VCS games available today. The veteran games company expects to sell 200,000 VCS systems in the UK this year.

SEGA MEGADRIVE

An enterprising UK company, Medlantic, is producing a converter to run Japanese Megadrive games on a UK system. The device will cost between £20-£25. You can contact Medlantic on 0455 291865.

Seismic Software Inc has a Megadrive game based around the F-119 Stealth Fighter. *Air Diver* features super transports, night flying in the north Pacific and specifications on the world's most advanced fighter. "You have been selected for a mission of the utmost secrecy," says Seismic, "The details of the mission have been purposely withheld until the last possible moment to prevent any leaks to the enemy. Led by an evil, fanatical leader, an unknown terrorist organisation has acquired a military force so powerful that so far, no conventional force has been able to withstand it. Your mission is to find and eliminate the enemy terrorists."

PLAYING TIP

To turbo-charge *Tetris*: press [DOWN] and [START] on the title screen.

CALLING ALL CONSOLE COWBOYS

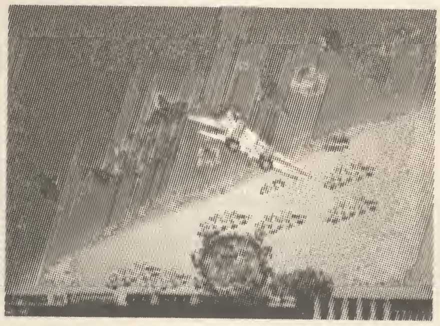
This is the only weekly guide to console news, reviews and tips in the world, and we need your hot tips, cheats and maps for any games on the Sega Megadrive, Nintendo Gameboy, Sega Master System, Nintendo Entertainment System, NEC PC Engine, Atari Lynx or SNK Neo-Geo console. This is your chance to share your expert games knowledge with other players around the country and get your name in print!

What's the latest hi-score on your favourite video-game? We want to print the UK's best scores on the leading console games available. We would like your top scores on all Lynx and Neo-Geo games, *Alex Kidd* (Sega Master), *Altered Beast* (Megadrive/Sega Master), *Batman* (Gameboy/Megadrive/NES), *California Games* (Sega Master), *Columns* (Megadrive), *Double Dragon* (Gameboy/Sega Master), *Dr. Mario* (Gameboy), *Fantasy Zone II* (Sega Master), *Forgotten Worlds* (Megadrive), *Galaga 88* (PC Engine), *Ghouls 'n Ghosts* (Megadrive), *Golden Axe* (Megadrive/Sega Master), *Gradius* (NES), *Gunhed* (PC Engine), *Hyper Loderunner* (Gameboy), *Life Force* (NES), *Makaimura* Gaiden (Gameboy), *Nemesis* (Gameboy), *New Zealand Story* (PC Engine), *Outrun* (Sega Master), *Qix* (Gameboy), *R-Type* (Sega Master), *R-Type II* (PC Engine), *Shinobi* (PC Engine), *Space Harrier* (Sega Master), *Space Harrier II* (Megadrive), *Super Hang-On* (Megadrive), *Super Mario Bros. II* (NES), *Super Mario Land* (Gameboy), *Super Monaco GP* (Megadrive), *Teenage Mutant Ninja Turtles* (Gameboy), *Tetris* (Gameboy/NES), *Thunderforce III* (Megadrive) and *Wonderboy* (Sega Master).

Send your hi-scores and playing tips to: Console Zone, *New Computer Express*, Future Publishing Limited, Beauford Court, 30 Monmouth Street, Bath Avon BA1 2BW.

NEC PC ENGINE

NEC has just released *Afterburner II* on a 4Mb Hu-Card for the PC Engine. Featuring colourful graphics and fast gameplay, this follow-up to the cult Sega coin-op should please shoot-'em-up flying aces. *Afterburner II* costs 7200 yen (£29) in Japan.



PLAYING TIP

Play *Side Arms* in slow motion by: pressing [Button 1], [Button 2], [Down] and [Run] on the title screen.

NINTENDO GAMEBOY

Ocean is developing the Gameboy version of *Fire Birds*, the new '*Top Gun* with helicopters' movie. *Firebird* brings the heart-stopping action of helicopter combat to your Gameboy screen. You control the awesome Apache attack helicopter as you fly over dangerous territories in pursuit of drugs barons. Avoiding the missile emplacements and hostile landscapes, you must manoeuvre your craft through tight spaces and dogfight increasingly skillful enemies as you progress.

PLAYING TIP

This neat *Nemesis* cheat immediately gives you missiles, laser, force-field and two options: pause the game and push [Up], [Up], [Down], [Down], [Left], [Right], [Left], [Right], [Button B], [Button A]. Unfortunately you only get this once per game.

NINTENDO NES

***Solstice, The Quest for the Staff of Demnos* was written by a Manchester-based development team – Software Creations – for US software company CSG Imagesoft Inc. Very reminiscent of Ultimate's classic *Knightlore* isometric 3D arcade adventure, *Solstice* features over 250 challenging rooms to explore. The game is an, "exciting test of wits, skill, courage and conviction". *Solstice* is currently out in America and Japan.**

Electronic Arts has already released an *Interplay* game on computer format, and now *Battle Chess* has hit the NES courtesy of Data East USA Inc. So how does this version compare to the graphically superior Amiga version?

"Forget the normal chess game. This is chess like you've never played it. Because *Battle Chess* isn't a game – it's war," says Data East.

"Now when you capture an enemy's soldier, the struggle unfolds in 3D animation. knight versus knight has never been so exciting. Six levels of play make *Battle Chess* a challenge for veteran chess players as well as the novice. Want to concentrate on strategy – then use the 2D overview. And when you're ready for action, switch to the colourful 3D graphics and digitised sound-effects. Take battle strategy into the 21st century with *Battle Chess* and leave the chess-board behind."

PLAYING TIP

To continue *Super Mario Bros:* hold down [START] and [Button A].

EXPRESS ON-LINE

Your weekly guide to the hundreds of bulletin boards and user groups which are waiting to hear from you. This week's featured bulletin board is Transylvania Express. And if you run a board, don't forget to write!

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EIGHT -BIT BACK-UP Essex computing's 8-bit user group for all. 25p plus sae. to: 8-bit back-up, 1 Northolme Close, Grays, Essex.

AMOS USER CLUB also STOS user club. Contact: Aaron Fokergill, Lower Moor, Whiddon Valley, Barnstaple, N Devon EX32 8NW. Telephone: 0271 23544 or Chris Payne, MD of Mandarin Software on 0625 959333

STOS USER GROUP send sae to L. Tredinnick, 19 Speldhurst Close, Bromley, Kent BR2 9DT.Free registration. Newsletter, disk etc

AMIGA DISK FANZINE Specialises in public domain. Send sae for details: Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk E32 2QQ.

CHANGE OF ADDRESS QL and similar, Phil Borman becomes: QL and related Operating Systems, David Johnson, Quanta, The Corner House, Loxley, Warwick CV35 9JT. Tel: 0789 842543.

SPECTRUM Plus- 3 UG. Contact D Garner. Telephone: 0582 472067

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AMSTRAD CPC HOME USERS - Steve Williams, WACCI, 9 South Close, Twickenham TW2 5JE. 081-898 1090

AMSTRAD 1512/1640/PPC - PC Independent User Group, The Computer Advice Centre 87 High Street, Tonbridge, Kent TN9 1RX 0732 771 512

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ARABIC COMPUTING - Rich Lackey, Arabits, 9 Bellview road, Worthing, West Sussex BN13 1EY

ASHTON TATE SOFTWARE - Silvia Robinson, Baseline, Ashton-Tate, 1 Bath Road, Maidenhead, Berts 0628 33 123. Prestel page 43221

ATARI PORTFOLIO - D Gilpin, Atari Portfolio User Group, 84 Cambridge Avenue, Gidea Park, Romford RM2 6QU. 0708 730764

ATARI ST - Paul Glover, The ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX. 0602 410241.

BBC MICRO - BEEBUG, 117 Hatfield Road, St Albans, Herts AL1 4JS. 0727 40303.

C LANGUAGE - Martin Houston CUG (UK) Houston Technology Ltd, 14 Arden Oak Rd, Sheldon Birmingham BS26 3LX 021-722 3168

CAMBRIDGE Z88 - Roy Woodward, Z88 Owners' Club, 68 Wellington St, Long Eaton, Nottingham NG10 4NG

CD ROM - UK CD-ROM User Group, High Wings, Salem, Treforys, Abertawe SA6 1XX 0792 844 370

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FRACTALS/CHAOS THEORY - Andy Lunness, 69 Bronte Avenue, Bury, Lancs BL9 9RN. 061-764 6469

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IBM PC - The IBM PC User Group PO BOX 360 Harrow HA1 4LQ.081-863 1191 BBS 081-863 6646

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OS/2 - Karen Burns, OS/2 User Group, Cecily Hill Castle, Cirencester, Glos LG7 2EF 0285 655 888

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THE PD COLUMN

There's a wealth of free software out there which is yours for the price of a disk. This week in a new-look brighter column Adam Waring looks at some of the gems which are out there just waiting to be discovered...

I'm sure that you'll have noticed the changes in the style of *Express* that have been happening over the last couple of weeks. It's all part of our effort to bring you a bigger, brighter and better magazine.

Well, the PD Column is no exception to this rule. From now on there will be one or two pictures accompanying the column to give you a clearer idea of what the software is all about.

Also the format of the reviews has changed. At the top of each piece you'll find the name of the program, the computer it runs on and a supplier that you'll be able to obtain it from.

It's all designed to make it easier for you to find the PD software that you want for your machine. See for yourselves.

Expander • ST Elmsoft • Util 19

If you're one of those ST owners who bought the early machine with the single-sided drive, you must be jealous of those who waited and got a machine with double the drive's capacity.

Of course you can buy a double-sided drive quite cheaply nowadays as a direct replacement for the internal one. But all your old disks will still be formatted to single- sided capacity.

Naturally you don't want to be wasting half the available disk space on your upgraded machine. The only way around this is to copy all the files from your single- sided disks onto ones that have been formatted as double-sided. If you already have a large collection of these disks then it could take absolutely ages.

Expander may be the answer. It lets you re-format your single-sided disks to double-sided, without losing any of the existing data! Clever, eh?

Elvert • ST • Wizard PD

The problem with transferring text files from one word processor to another is that they tend to use different control codes to represent different things.

The problem is even more apparent when you are trying to get your WP to read data from a completely different machine.

For instance, when I write something on my CPC, and wish to transfer it across to my ST, I have to spend a good quarter of an hour stripping out all those weird codes. My ST's public domain word processor just doesn't understand a word of the raw data.

The problem usually lies in the non-ASCII codes. Those numbers above 128, which aren't actually printable characters (or if they are, they're not the same) tend to represent different functions on different word processors. You have to find and replace all these codes. Until now you'd have had to do this manually.

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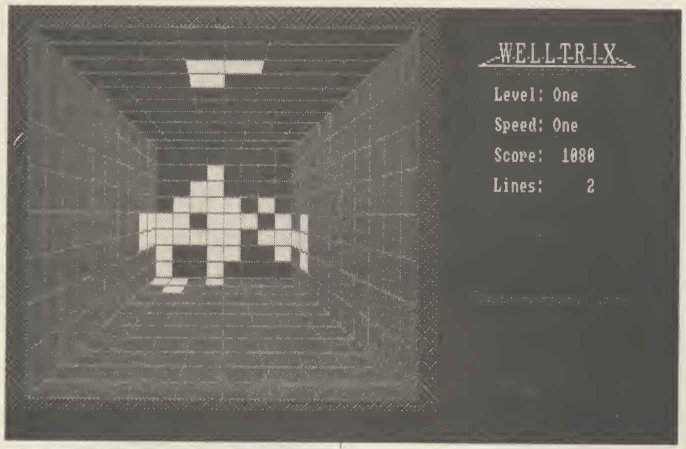
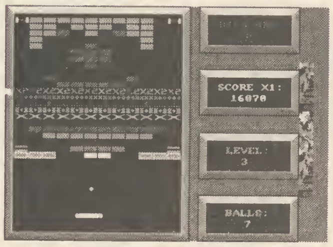


• *Welltrix: a PD version of the 3D puzzle game from the eastern bloc.*

coloured bricks. You had to bounce your little ball around with your bat, knocking the bricks away until there were no more. Then you'd get another load of bricks with which to repeat the process.

Alright, it was a boring game. But nevertheless, those who fancy a trip down memory lane may find it worthwhile for an hour or two of fun.



• *Tetris, sorry Quattro, an excellent clone.*

The version on this disk is called *Breaker*. It offers one or two advanced features over the original, and offers the ability to design your own screens.

China Challenge is an Amiga version of the ancient Chinese game, mah jong. Since I've never actually played the game before, I didn't really have much of an idea about what I was supposed to be doing. So I can't really tell you whether it was any good or not. It looked very pretty though, and I'm sure that if I learn to play I'll learn to love it too.

Mechamoid is another of those ancient arcade games revamped for use in the Amiga PD scene. It's an *Asteroids* copy. Your spaceship has wound up stuck in an asteroid field. Your only hope for survival is to blast the boulders to bits as they hurtle towards you through the ionosphere.

The scenario's been changed, but the gameplay's the same. Faces take place of the rocks, but the aim is still to rotate, fire, move and, in emergencies, take pot luck and hit the hyperspace button. *Asteroids* was one of my favourite games back in 1979, so I really enjoyed this one.

Quattro is the fourth game on the disk. For *Quattro* read *Tetris*. It's virtually identical to the famous Russian brainteaser. Slot the falling blocks together to form horizontal lines. When you get one, the row disappears. If the blocks stack up to the top of the screen then it's game over. Simple idea, great fun.

Welltrix is similar to *Quattro*, but adds another dimension to the game. This time the blocks fall into the screen. The player is sort of peering down a square tube. The blocks can be rotated round the sides and dropped into place. When the pieces reach the bottom they slide across as far as they can go.

Welltrix is the best game on the disk. It's frantic, thought provoking action all the way.

So there you have it. Five games that are sure to provide hours of furious fun. Did I say relaxing? No way! ■

WHERE TO GO

Now your appetite has been whetted by this mouth-watering selection of PD, I expect that you'll be wondering where you can get your hands on all the gear.

By the very nature of PD, most of the programs mentioned are available from many sources, including these:

Elmsoft, PO Box 17, Loughton, Essex 1G10 2EE. PD for your ST. Apparently, disks are available from as little as 90 pence. You can get a catalogue disk by sending either a blank disk, or a cheque for £1 to the above address.

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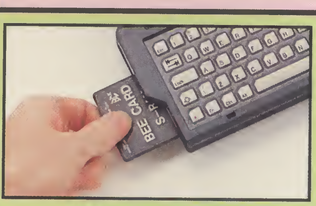

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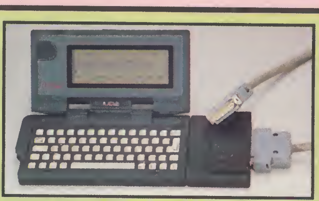

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Mark Higham's GAMES WEEK

This week in Gamesweek we have a *New Computer Express* exclusive. Notice that piccie below on the right? Well you're one of the privileged few. Some of you may recognise the main playing sprite as something of a coin-op giant. It is in fact the infamous Strider, sporting shimmering blue lycra. This is the first released screen from *Strider 2*, and boy does it look good!

Just glance at the screen and you can see how the backdrops have livened up. But that's not all. Instead of simply wandering through the game in the direction the computer dictates, you can wander along just about any route you choose, though only one route leads you through the level.

Other impressive changes include the way Strider metamorphosises into a robot if you collect enough energy. The robot can only move left and right but he's so well armoured that he's an essential asset when it comes to fighting the bad guys. If this isn't good enough, you can always change back to Strider and leap your way out of trouble with a range of athletic moves.

End of level bad guys have been beefed up to be clearly animated and as enormous as ever. Product Manager Steve Fitton also talked of the possibility of including some of the end of level bad guys from *Strider 1* on top of those already in the game. Memory and disk space may put the kibosh on that.

Unfortunately the sound is identical to the first game. The intro music is exactly the same and spot effects differ little from the first game either except that there are more of them.

The advanced demo I saw convinces me that this is going to be one hot game. Even the arcade giants are spotting potential in the formula – they've already decided to convert the game into a coin-op, the ultimate accolade for a computer game.

If you want to read the full interview with Steve Fitton, make sure you catch issue 16 of *ST Format*, due out October 18.

PLAYING TIPS

BLOODWYCH • Mirrorsoft

Tips for Mirrorsoft's *Dungeon Master*-style adventure.

▲ The best team to have is two fighters at the front and at least one mage at the rear, preferably red.

▲ Don't discard weapons at the beginning because they can later be transformed into coinage.

▲ When attacking move round in a square, anticipating the enemies' movements so they step into your line of fire.

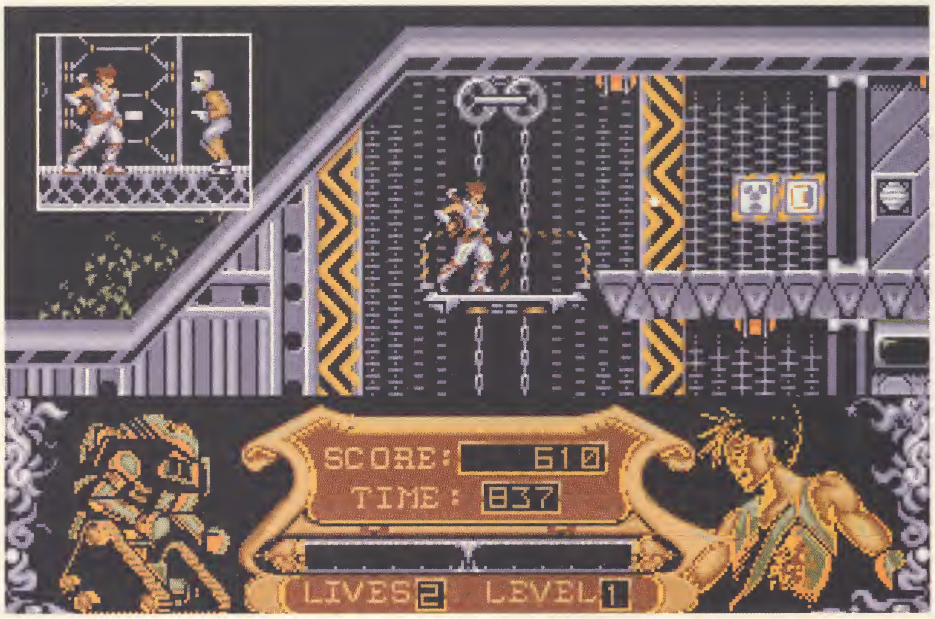
▲ Another method of attack is to hide behind a wooden door and hammer the attack button. When the enemy opens the door, immediately close it to get a couple of hits with this each time

THE 16-BIT TOP TEN

For the week ending 8th September

1	1	Corporation	Core Design	Ag
2	3	Kick Off 2	Anco	ST Ag
3	4	Targhan	Action 16	ST Ag PC
4	11	Fast Lane	Action 16	ST Ag
5	NE	Battlemaster	PSS/Mirrorsoft	ST Ag
6	6	Yogi's Great Escape	Hitec Software	ST Ag
7	12	F19 Stealth Fighter	MicroProse	ST PC
8	8	Italia 1990	Codemasters	ST Ag
9	7	Shadow Warriors	Ocean	ST Ag
10	17	Pro Powerboat Sim.	Codemasters	ST Ag

Formats:ST=Atari ST.Ag=Commodore Amiga . PC =IBM, PC or compatible
Chart compiled by GALLUP. © European Leisure Software Publishers Association.



• *Part of the struggle in Strider 2 comes in finding a route through the game. Here you negotiate a host of lifts just to reach a dead end. Inset: An added extra is the ability to change into a robot. At times like this it's almost essential.*

CLEAR SKIES

We all know film licences make a huge bundle even if the game plays like shit. The latest publisher to hop on the film licence merry-go-round is Mindscape and its conversion of the desperately over-promoted Tom Cruise vehicle *Days of Thunder* is due out at the beginning of October.

Although predictably a car racing game, near-finished demos suggest there's more it than the usual tripe we've seen scale the charts over and over again. A clever 3D effect gives a unique perspective on the race course and the opposing cars can be viewed from all angles even if they do look blocky. The game is more than just a typical racing simulator. Judging by the specifications, a bloody sight more. Not only do you have to buy equipment to build your car into some kind of Herculean monster but you also need to negotiate some seriously wicked tracks.

As with any 3D racing game, the only likely but major problem is that the 3D effect may not give the impression of speed.

ST and Amiga versions of the game are due in October with a PC version scheduled for release in November. ■

PLAYING TIPS

DRAGONS BREATH • Palace

This week comes a wealth of *Dragons Breath* spells courtesy of Stephen Hore from Cornwall. Get breeding.

Dragon Strength:
- 2 RASGON (grind and heat)
- 3 MIONACLE (grind and condense)
- 1 ULIN (mix and condense)
- 1 ACRUS (mix and heat)

Dragon Health:
- 2 RASGON (grind and heat)
- 1 THOFT (normal)
- 2 ORGANSE (normal and heat)
- 1 ACRUS (mix and heat)

Dragon Wisdom:
- 2 RASGON (grind and heat)
- 1 THOFT (normal)
- 2 HALOROS (cut and condense)
- 1 ACRUS (mix and heat)

Dragon Eyesight:
- 2 RASGON (grind and heat)
- 3 MIONACLE (grind and condense)
- 2 IGELE (normal and heat)
- 1 ACRUS (mix and heat)

Dragon Speed:
- 2 RASGON (grind and heat)
- 1 THOFT (normal)
- 2 MAGIAN (normal, heat and condense)
- 1 ACRUS (mix and heat)

To increase village population:
- 2 CALOTIS (normal, heat and condense)
- 2 CHURL (normal and heat)
- 2 ACRUS (mix and heat)

GAME REVIEW

TEAM YANKEE

EMPIRE • £29.99

Where have all the tank sims gone? After *Conqueror*'s run away success back in February, everyone expected all the big software publishers to start cashing in on what was certainly an addictive formula. What happened instead? Tank sims might almost be an extinct game genre. Rectifying this sorry state of affairs next week is Empire, with the release of its first tank simulation game – *Team Yankee*.

One glance at the screenshots and you can see what it is that makes *Team Yankee* different from rivals like *M1 Tank Platoon* from MicroProse. Since the game is played with four tank units, the quadrant screen view represents the view seen from the front of each of your tank units. This approach is designed to help you plan strategies, knowing that you can be aware of the action at all times.

You can opt to play a practice game, where you drive your tanks around a specified course, or you can go for the real thing. At the start of a mission you're presented with a notebook which details the specific objective. You need to write this down because you can't refer to it later.

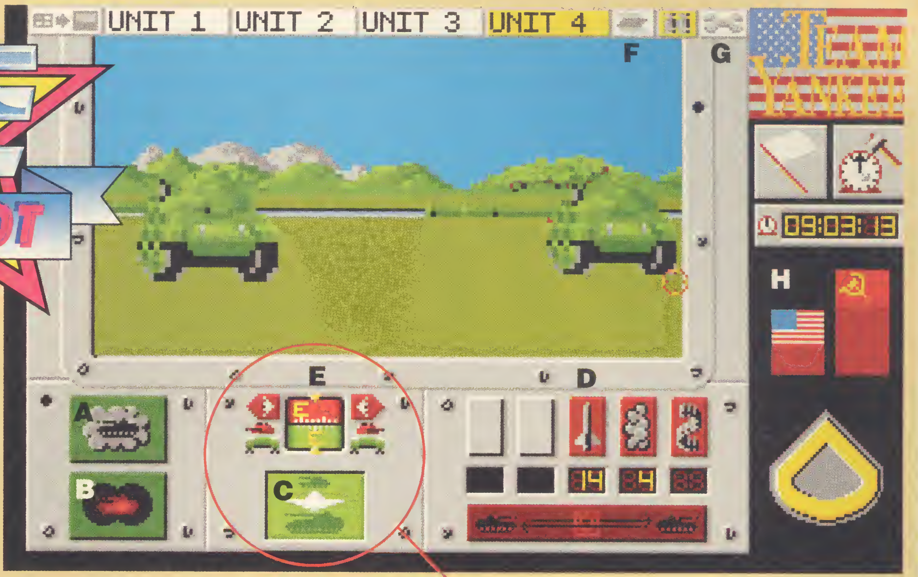
Your first sight in a game is the appearance of a screen split into quadrants with the sight of four different landscapes in front of you. You can switch to a full screen view from any of the windows to get access to extra features, or you can look at the map screen where you make all your movements and can study the terrain from different levels of magnification.

A typical mission might involve you defending a site or going out and hunting the Red Bear. Either way, you need to move around the map carefully. Soviet tanks can fire on you from a distance of over a mile so you often need to zoom in on your view. Any sign of trouble and you can start firing any of your five weapons or throw up a smoke field to shield your tanks from the enemy.

To move your units you need to switch to the map screen and position the cursor on the map. Set a speed for the tank unit and they slowly set off for their destination. Their speed will be different depending on the terrain type. Roads are the fastest route of travel with rough landscape a close second, though both are exposed to the Soviets. Forests and rivers are the slowest terrain types but forests also offer the most protection.

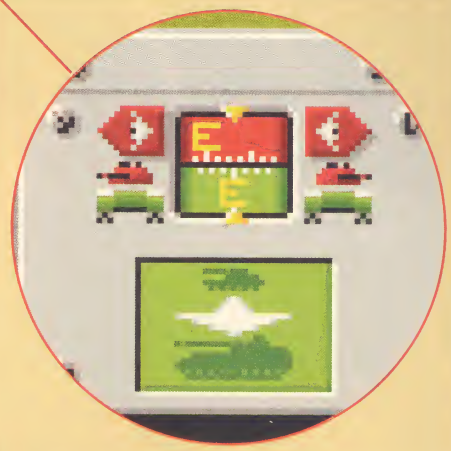
Only a couple of annoying criticisms spoil *Team Yankee*. For a start, there aren't enough missions to play. You have just five which you replay through four ranks of command. With each rank the ratio of your tanks to the Soviets' rapidly diminishes. Secondly, and most importantly, It's frustrating that you can't control the tank from the main screen. Switching over to the map screen each time not only rips you aware from the real action but it also involves unnecessary mouse clicks.

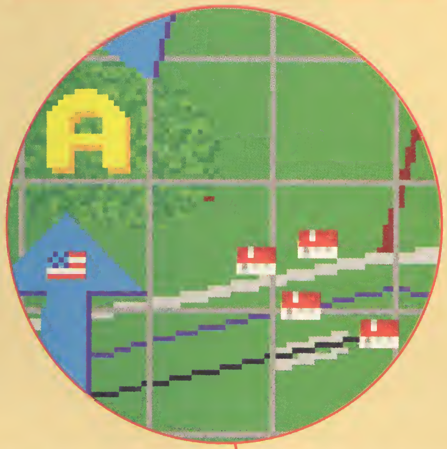
The game weighs in at a rather hefty £30 but as some compensation the original *Team Yankee* book, an A3 map and notebook are included – though personally I'd rather have £5 off the price. The game is still good value for money and if you were a fan of *M1 Tank Platoon* you're going to find *Team Yankee* gives even more enjoyment. The strategies are demanding and the game style particularly absorbing. Go hunt the Red Bear.



FEATURES

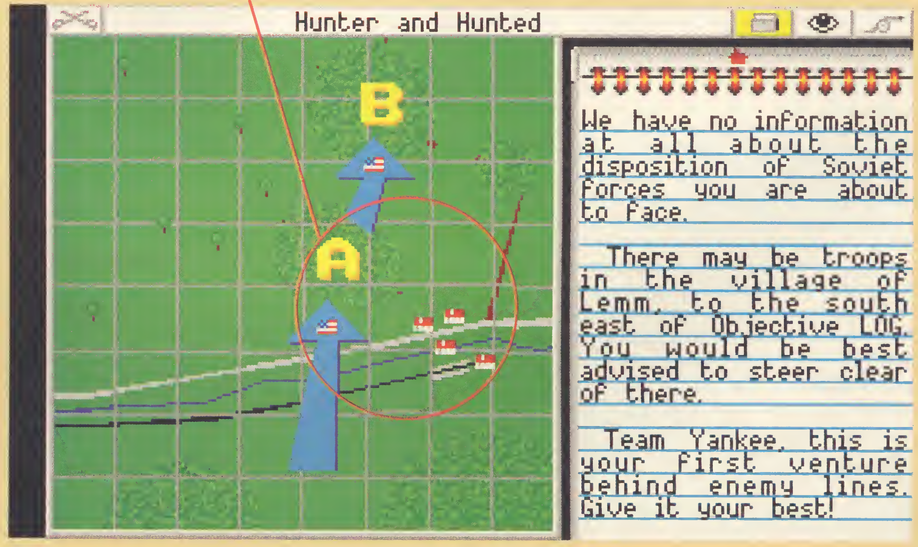
A) Fire a smoke bomb to hide your tank unit
B) Switch on infra-red display to look through the smoke
C) Select zoom view D) Smoke missiles
E) Swivel the gun turret F) Call up the 2D map
G) Call up status screen showing the state of your tanks
H) Yours and opposing tanks





- (Above main picture) *The split screen view makes it easy to watch all the action at once in Team Yankee. (Inset) Zoom in on the horizon or change the gun turret direction. But there's no control of the tank from this screen.*

- (Below) *Move onto the map screen to move around the game area. Click on a location, set your tank speed and your units charge off to their destination. (Inset) The mission map shows the position of the Soviet forces. They can fire on you from a distance of more than a mile so move carefully.*



Hunter and Hunted

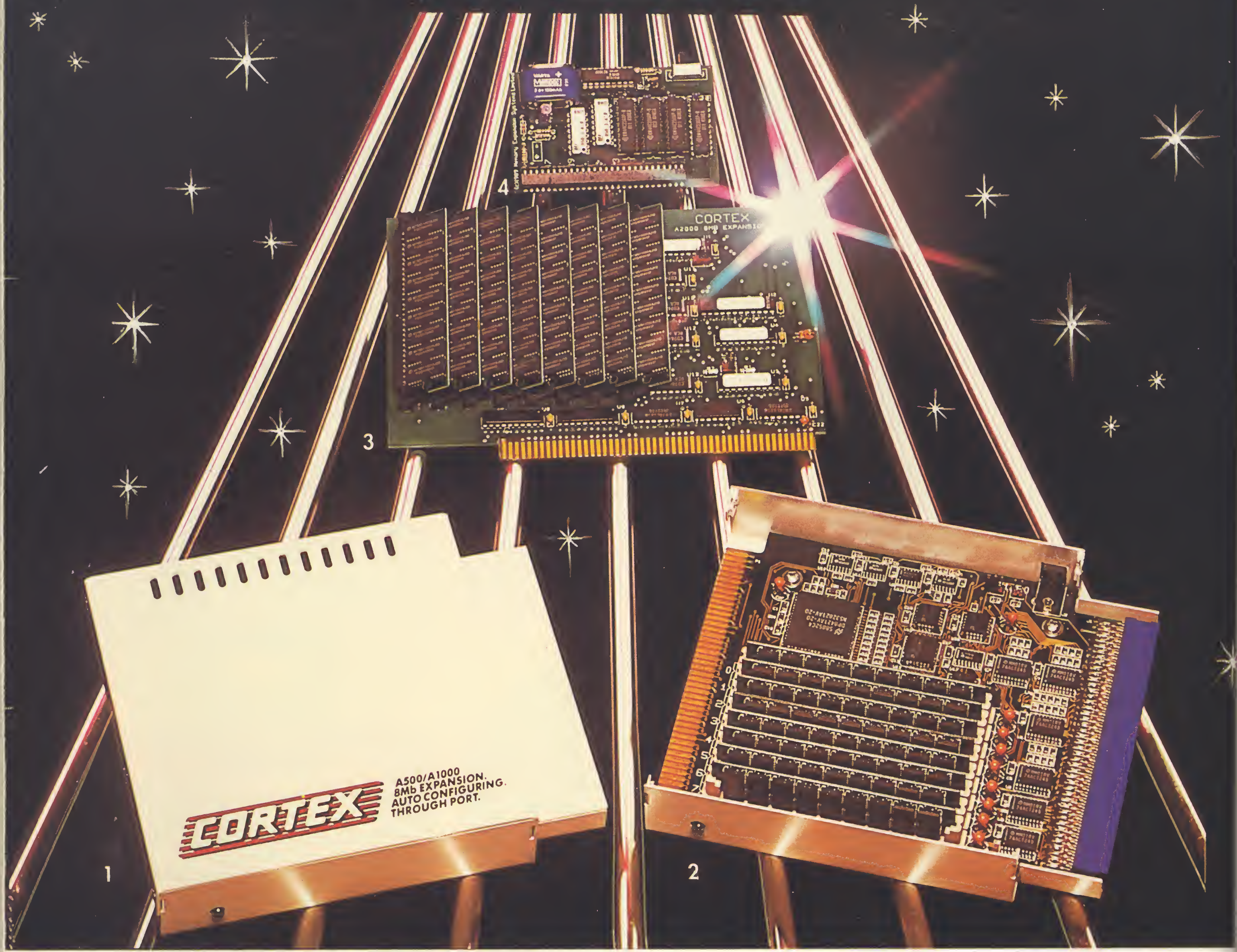
We have no information at all about the disposition of Soviet forces you are about to face.

There may be troops in the village of Lemm, to the south east of Objective LOG. You would be best advised to steer clear of there.

Team Yankee, this is your first venture behind enemy lines. Give it your best!

A LONG TIME AGO IN A GALAXY FAR FAR AWAY, IT WAS DECIDED THAT THE WAY TO EXPAND AN AMIGA A500 BEYOND ONE MEGABYTE WAS TO OPEN THE HOST MACHINE AND FIX THE EXPANSION MEMORY INSIDE, THUS INVALIDATING THE WARRANTY, OVERLOADING THE POWER SUPPLY AND OFTEN CAUSING DISASTEROUS HARDWARE INCOMPATABILITY PROBLEMS

.....................THEN CAME ....


4
CORTEX A2000 8MB EXPANSION
3
CORTEX
A500/A1000 8Mb EXPANSION. AUTO CONFIGURING THROUGH PORT.
1
2

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1. A500/A1000 8Mb Expansion (2, 4, or 8Mb). Fully implemented autoconfigure. Fully operational through port for compatability with other autoconfiguring hardware (e.g. CBM A590). Complete with its own power supply (U.K., U.S. or Euro). **(2Mb FITTED). £299**

2. As above, but with the cover removed.

3. A2000/A2500/B2000 8Mb Expansion (2, 4, 6 or 8Mb). Fully implemented autoconfigure. Uses 1M x 8 bit or 1M x 9 bit SIMM's. **(2Mb FITTED). £279**

4. A500 ½ Mb Expansion. The essential A500 upgrade. A high quality A501 equivalent using low-power 1Mbit DRAM's. The unit has a "enable/disable" switch and is available with or without NiCad battery-backed clock/calendar module. **£37**

5. External 3.5" Floppy Drive (not pictured). High-quality silent mechanism. Extra drive port and "enable/disable' switch. **£59**

Hard disks. Systems available for all Amiga variants call for details and pricing.

CHIP UPGRADES

"Fatter Agnus" chip (8372A) for A500/A2000. Enables up to 1Mb of Chip RAM. Fitting requires some skill and will invalidate your warranty. **£60**

1.3 Kickstart ROM. Upgrade for A500/A2000 **£33**

A590 Upgrade chips: ½Mb **£34**, 1Mb **£62**, 2Mb **£120**

SIMM's. All types available. Call for pricing.
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All prices include VAT and postage & packaging. Prices may be subject to change without notice. All products carry a 12 month guarantee. Dealer enquiries are welcome.

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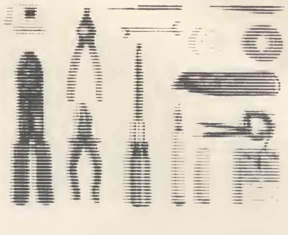
CIRCUIT CITY



Ever wanted to be able to build your own add on for your computer? Each week Keith Pomfret builds the skills you need – this issue he looks at upgrading an old ST to a double-sided disk drive.

To change your ST from a single-sided half-megabyte drive to a double-sided one megabyte one isn't a particularly difficult job, but can be a little fiddly, and like any job that involves disemboweling your prize possession and maybe even invalidating the guarantee, shouldn't be taken on lightly.

If you are reasonably dextrous, possess both a small cross-head and straight-head screwdriver, and have an ST out of guarantee, read on. Otherwise read at your peril. The two screwdrivers I used were the largest straight and cross-head drivers from the Tandy kit of precision screwdrivers (six quid well spent). No more tools and no manual required.

A double-sided disk drive is easy to come by via one of the mail order suppliers – for instance dataplex sells one for £55 on 0753 35557.

The disk drive lives deep inside your 520 ST and is connected to the chassis of the machine by three long screws. Before it can be teased away you must first get inside.

Turn the ST upside-down on a table covered with a dark cloth. The dark cloth helps because any screws put on it will show up clearly. It's a good idea to work on a cloth in any job that doesn't involve using heat or solder. It will protect the wife's best dining table and should afford the computer some small degree of protection from the hard table surface.

Inset in the underside of the ST are several cross-headed screws. Be sure to locate them all. On many STs, there's one hidden under a notice that warns that its removal invalidates your guarantee. If the machine is less than twelve months old, you may need the guarantee and you should think seriously before you rip your poor old ST to bits.

With the ST lying upside down on the table, remove all of the cross-head screws. Put them in a little pile somewhere safe. A saucer is the ideal implement. A small magnet may help you coax a particularly reticent one out (and there's always one isn't there.) Once all of these screws are in the saucer you can remove the disk drive screws. These are the three flat headed screws that correspond to the position where the nasty half megabyte drive lives.

Once these three long thin screws are sharing the saucer with the little dumpy cross headed ones, it's time to turn the ST back the right way up. This is the first twiddly bit as now you've unfastened the two halves and the drive is loose, it's quite easy to end up with a hung, drawn and quartered computer.

Enlist the help of the nearest friend/mother/wife etc and take one end each. Grip the top and bottom in such a way as to hold them firmly together. Turn the machine the right way up and put it gently down on the cloth. If you've done it correctly, it will be sitting in one piece on the cloth. If you haven't, you'll be blaming your helper for dropping their end (and what else are helpers for?).

The top half of your ST will lift off in one piece, leaving you looking at your naked coffee stained keyboard with the disk drive and important bits behind it. The *Express* ST lost its protective cover (the tin bit that covers the disk drive etc) but that's not a problem, more of a fiddle. Remove the tinny bit. It locates at the rear of the machine.

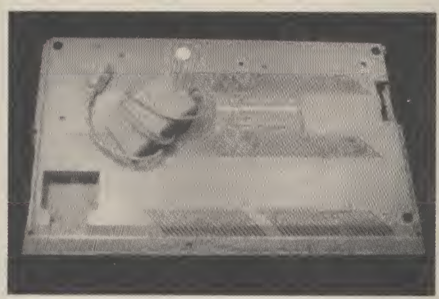
Now you are staring straight down at the nasty half-megabyte drive. The screws are already out but the power and signal connectors are still attached at the inboard end. these will come off with a gentle pull (at the connector, not the cables). The drive will lift straight off and can be placed to one side until sold in the *Express* reader ads.

Place the new whizzy one-megabyte drive in its place and reconnect the two cables by pushing them firmly on to the drive connectors in the same aspect that they came off. Replace the tinny protector, put the lid on and enlist your helper for another batch of ST turning. Once on its back again, replace the disk drive screws first. These may (and will) be a fiddle. The drive sits on three little pedestals and hoping everything to line up the first time is futile.

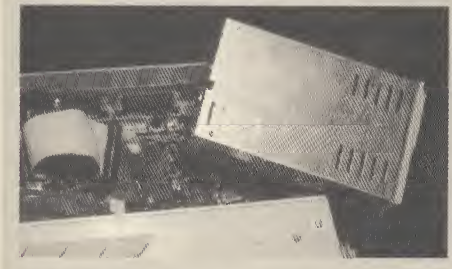
At one point I turned the machine back over and crouched on the floor squinting up at the holes while supporting one end on the table, but this isn't a requirement. Do what you find easiest and keep your cool. Once the drive screws are in, it's a simple matter of inserting and tightening the cross-headed casing screws. Once this is done, you can pat yourself on the back and prepare to tell all your mates how easy it was

It's a fiddly job but not a nasty or dirty one, so you don't have to be a technical genius to attempt it.. Next week we'll be talking about power supplies and how to go about making, buying or upgrading one. ■

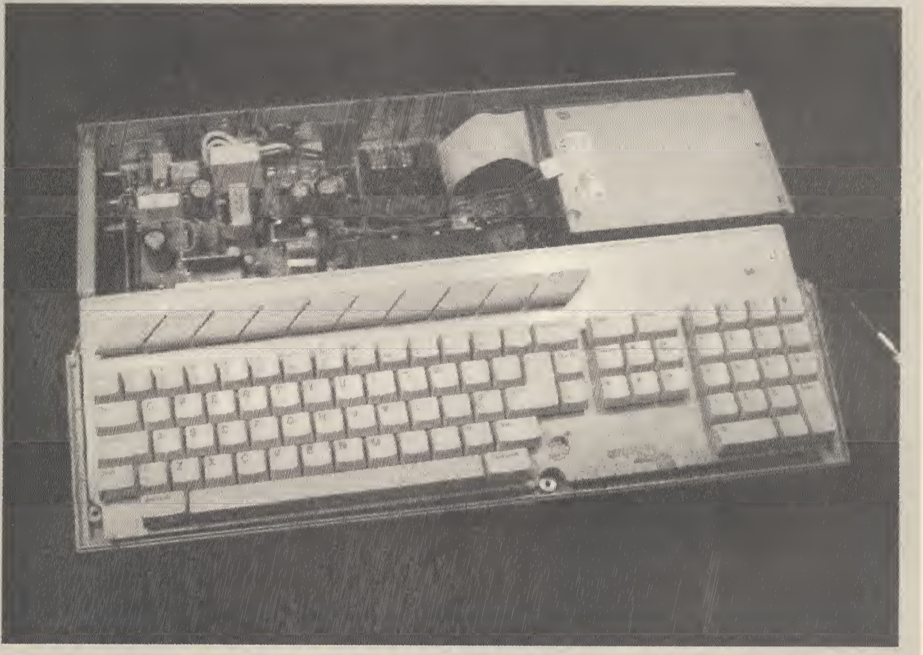
JUST TAKE THE FOLLOWING THREE STEPS



• With the ST on its back remove all the cross-head screws including the one under the label.



• Disconnect the cables and remove the old single-sided drive, ready to be sold off!



• Pop the new drive into place and reconnect the cables. Now all you have to do is reassemble the ST by reversiong the process and you're done.

TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Keith Pomfret's Tech Tips and we'll soon see you right. Send your sorry stories to Tech Tips, Beauford Place, 30 Monmouth Street, Bath BA1 2BW.

■HELP! CPC modulator

I was recently looking through a catalogue that gave details of a TV modulator that would allow the Amstrad CPC464 colour and mono monitor to be used additionally as a TV (with better resolution too I might add) for just under £50.

This Amstrad CPC464 TV modulator has generated three questions that I'm sure Tech Tips can answer:

(1) Can I (with the addition of a CGA card) replace the mono monitor on my Opus PC III (turbo) with the Amstrad CPC464 (and TV modulator) colour monitor as a colour monitor?

(2) Can I use the Amstrad CPC464 (and TV modulator) colour monitor as a monitor for an Atari 1040STFM?

(3) Can I use the Amstad CPC464 (and TV modulator) colour monitor as a a monitor for a Commodore Amiga 500?

Mark Mulqueen, Lancs.

The modulator that you refer to is a generic Amstrad product designed to take the RGB output of the CPC series and turn it into a modulated output suitable for a TV. This isn't a suitable piece of kit for anything other than that. To answer your questions:

(1) No, not at all.

(2) The Amstrad CPC colour monitor can be used as a display for the 1040STFM directly via a special lead. The lead can be made by reference to the pin-outs in the manual, or bought from either your friendly computer shop or one of the firms that make up leads to order.

(3) Exactly the same answer as question 2. The Amiga can drive the CPC colour monitor directly using a correctly configured lead.

- Circuit City will be tackling the ST-CPC monitor and Amiga-CPC monitor leads as a joint project soon. This is a fine alternative to using the TV with your ST or Amiga and makes the upgrade path to either machine from the CPC smoother.

■HELP! Arch Library

I am an Archimedes programmer and I was wondering where you can get the OS system book, as I run a PD library that makes about 40 per cent of its collection. Now the plug. I will gratefully receive any programs for my collection. Our policy is: send in one disk and we will send you two in return. Our present collection is 20 disks, 30 plus of sound trackers (Amiga stuff – so it's not all that good), and loads of demos.

Two pounds a disk. Send SAE for a catalogue.

5 Randolph Court, Stirling, Scotland FK 82AL

You can get the manuals that you require direct from:

Acorn Computers Ltd, Fulbourn Rd, Cherry Hinton, Cambridge CB1 4JN

Now that we've allowed you a sly plug, what about sending some of your PD down to *Express* for evaluation.

■HELP! Amiga upgrade

I want a RAM expander for my Amiga 500, over 512K RAM, but in all the adverts I've come across they say access to the Gary chip or a simple soldering job is needed, ultimately invalidating the warranty. Is this true? Or is this there a way to expand the memory without losing the guarantee?

M. Smith, Liverpool

There are several memory expansions available for the Amiga 500 and none worth having need anything more than the location of a board onto a connector. Most memory expansions fit into the trapdoor underneath and you could expect to pay about £40 for a 512K expansion with a battery backed clock. There are other expansions up to 1.5Mb or more for the hole underneath, (including one that doesn't need access to the Gary chip) or if you want to pay an arm and a leg, you could buy one that slots onto the expansion on the side. These can expand the memory by up to 8Mb. Try the adverts elsewhere in this mag for suppliers of Amiga memory upgrades.Watch this space for an in depth review of the 8 Mb beast.

■HELP! Timeless Amiga

I have a hard drive, and recently I noticed that when I powered up the setlock command in my startup sequence it told me it couldn't find the clock. It's not the first time that has happened, but this time, when I listed the files I saw a few had their dates shown as May 1993 or something. Now I don't like my programs to show the wrong date, so I redated these files to show their proper dates, then reset my Amiga.

The same thing happened again so, thinking I had a virus, I switched off for a few minutes and tried again. Again no joy. Listing them again, in the C directory I noticed a file called Genim 4. I have *Devpac2* and therefore I should have Genim2. In which case how did I get Genim4? Resetting again the date was 1978!

No joy with my virus killers so, as a last resort, I deleted all the files I didn't recognise. Presumably that Genim4 program had a virus attached because my clock is OK now, no more problems. I'd be interested to hear from anyone else who might have any ideas on this problem, and could tell me if it was a virus, and if I've really lost a valuable file.

George Garven, Ayrshire

And as per your request, I've left this one wide open for all of those Tech Tip readers who may have had trouble making a date with their Amiga.

■HELP! Spectrum/CPC

I have written a very long Spectrum program which is a mixture of machine-code and BASIC. Instead of typing the whole thing out again, how do I transfer these programs to an Amstrad CPC, so that I can edit them on the Amstrad to make them run?

Do I use two R5232 interfaces and a null modem cable? If so what software would I use to transfer the programs. Also, could you give me a manufacturer and price for a null modem cable.

D Gillon, Co Durham

The null modem cable was covered quite comprehensively in a recent Tech Tips. In order to transfer the programs across, you'll need to get some communications software for each machine and a serial port for the CPC. The null modem will cost a couple of quid to make, the serial port about £50, but it does have ROM-based software. PD comms program for the Speccy such as *Firescroll* will cost a couple of quid.

■HELP! Upgrade

I own a CBM 128, remember them? A good computer, but no software support and now no hardware either. So is it time to upgrade, again.

■ TIP! Arch text files

I read with interest the solution offered by D Prie in issue 96, regarding the problem of text-file viewing from the Archimedes desktop. His/her method was all very well, but if you are going to configure the Archimedes to boot from a disk, surely you would put `!Edit` on that disk as well, so text files would be loaded by this application when you double- clicked ?

A much less complex solution than that offered by Mr (Mrs) Prie is, from desktop, press F12, and enter the following line :

```
*Set Alias$@RunType_FFF Echo:<22>:<0>:<14>:M Type %0:M Echo:<15>
```

and press [return]. Double clicking on a text file will result in the file being shown a page at a time – press [shift] to go on to the next page.

If you wish, the line may be put in the !Bott file of an application, as in Mr (Mrs) Prie's letter.

Stuart Tyrell, Merseyside.

Thanks very much for another elegant answer to the problem.

The editor adds: have you found the new extended Archimedes column on page 23? Or the review of Minerva Desktop Office *on page 14? With* Express *you can keep up to date on the Arc.*

I had thought of an Amiga, but read somewhere that Commodore is about to drop the 500 series (that has happened to me before). Or a PC with VGA and perhaps a hard disk (eg Amstrad 2086 or 1640). But the software seems very expensive if one has to add on the bundled software. The tasks are WP, programming and the odd adventure or strategy game.

An Amiga 2000 is advertised as able to be configured to run IBM software (does it also run Amiga 500 software?), with a hard disk, 2 floppies and 1Mb. This compares quite favourably with a local firm who offered to make up a 286-based processor PC, 1Mb with hard disk, one floppy and VGA for £1,148. Just got that sorted out and someone said that what they'd really like is the Archimedes. Oh help! You see them and use them, what are the advantages of each choice? Or where can I go to make a comparison and get some advice?

Alistair Mclean Telford, Shropshire

The Amiga 500 series has a lot of life in it yet, so don't be afraid of spending your hard earned cash on it. The B2000 and A500 are compatible with each other and either can be modified to run PC software. The A500 can have the KCS Power Board added to turn it into an XT clone, the B2000 is luckier, having a 'cased' design like the PC and slots within it that can take a bridgeboard. The bridgeboard is a PC on a card and is available as either XT or AT. The simple answer is to decide exactly what you want the computer for. When you've made a list of your needs, either make a choice or write again and we'll try to help.

■ WIBBLE! Criticism

This a reply to your recent attempts at convincing your readers that the Amiga is the machine for everything. It is not, by any means. Sure, if you want to produce excellent graphics and play prettier games, then the Amiga should be the choice for you. However others need machine for more than this.

I feel qualified to comment, having used a large variety of machines including the Amiga, ST and Mega, Mac II, IIgs, Archimedes and terminals for Unix and transputer workstations.

If you want to do some serious progamming, WP, DTP or professional music production, then the ST is a machine far more suited than an Amiga. Of course the latter has prettier graphics, but these are applicatons where this is not useful at all. For those readers you told to buy an A500, I suggest they buy a Mega1 and mono monitor instead, offering a decent keyboard and a very good display (70Hz), things the Amiga lacks, but which are essential for really serious use.

Although I hesitate to attack you personally, some of your comments sound like a 13- year-old gamer rather than a serious user. I speak as a computer scientist of many years experience, and comments such as 'self styled expert' are not acceptable – I noticed you conveniently glossed over the points that the reader to whom you attributed this term made.

To say the ST is not in the same league as the Mac II and Arch is valid. To place the Amiga up there with them, and to call the ST so obviously inferior is both amusing and ignorant. The ST is faster. The ST has more usable and reliable applications. The Amiga is an excellent all-round machine, with a higher quality of serious software.

In conclusion, assuming you have the honesty to print this, I say to your readers, pick the machine most suited to your needs.

Lee Fuller, Romford, Essex

You claim to be a scientist and yet your research is patchy to say the least. Do I take it that you are lauding the ST purely on its clockspeed and ignoring the distinct advantages of the dedicated chip set in the Amiga. Surely not.

I find it hard to believe that someone who sets themself on such a high academic pedestal would make himself such an easy target. You have tried to back up an opinion by stating your job title. The saving grace was your conclusion in which we are in full aggreement.

■HELP! Drives

Just a simple query that I hope you can help me with. I wish to buy a second external drive for my Amiga 500. However, I have heard that the A500 power supply could give problems if you try and connect more than one external drive, or too much other equipment to the computer.

At present, I have just the one external drive, and a 512K memory upgrade, both of which were bought from Evesham Micros. If I bought a second drive, would it be OK, or would I need to buy a more powerful power supply, such as the one advertised by WTS Electronics in *Amiga Format*?

In case it helps, here's what it says on my power supply:

Power Supply DSP-A500
P/No 312503-02
0.3A fuse T315mA T40/E
Input: 240V AC 50Hz
Output: 5V 2.5A, 12V 1A, -12 0.1A

Adam Wright, Northampton

The Amiga will only support one external drive from its internal power, but many firms advertising in the pages of *Express* will sell you an extra drive that already has a power supply included in it.

This is I feel the most elegant solution, particularly if you are running extra peripherals that will themselves take extra power.

■HELP! ST drive switcher

Can you please help me with a couple of questions regarding my two 520 STFMs. My main machine has a 1Mb internal drive, whereas my slave only has a half-Mb internal. I own an external drive, which I have to keep switching between machines.

Would it be possible for me to have a cable made up which would consist of two male DIN plugs converting into one female din/plug socket? This would enable me to to have the external drive connected to both machines at the same time, at least in theory.

Of course I realise that only one machine would be able to access the drive at any one time, but it would save me having to power down all of my equipment, change the drive from the master to the slave and switch everything back on again.

Dave Palmer, S Tyneside.

It's a simple matter of a switched cable as you suspect.

The chap to talk to for one of these (I wouldn't advise you to do it yourself, it's more than a bit fiddly even for the most expert with a soldering iron) is Phil Craven at Compact Micros on 0274 636652. ■

■ OPINION! Amiga DTP

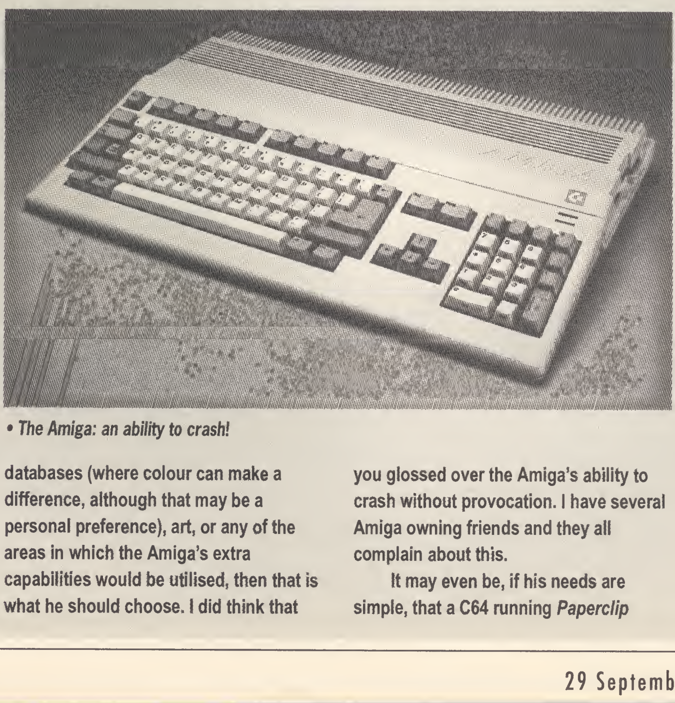
I was surprised at your reply to B Barret, regarding his claim that the ST was more viable than an Amiga for WP and DTP, I feel you were missing his point.

There is indeed no doubt that the Amiga has superb hardware with good quality graphics and sound. However you do not need 4.096 colours, multi-directional scrolling and stereo sound to do WP or DTP. What you need is a good quality screen that is easy on the eye, a stable environment and software to match.

The ST and its matching mono monitor admirably fit this bill and, with the ST available for less than £300, it is at a significantly lower price than the Amiga equivalent. The mono monitor is certainly Mac quality, and bigger too.

It's that old story of horses for courses. The ST does suit your correspondent's needs and was the logical choice. If he needs great games databases (where colour can make a difference, although that may be a personal preference), art, or any of the areas in which the Amiga's extra capabilities would be utilised, then that is what he should choose. I did think that you glossed over the Amiga's ability to crash without provocation. I have several Amiga owning friends and they all complain about this.

It may even be, if his needs are simple, that a C64 running *Paperclip* would be sufficient. You do not always need a sledge-hammer to crack a nut.



• The Amiga: an ability to crash!

Ian Laskey, Southend-on-Sea, Essex.

You are entitled to your opinion, and a valid one it is too. However, as your letter dropped on the *Express* doormat, a new Amiga magazine landed on the editorial desk that proves the Amiga's suitability as a DTP machine. The magazine, called *Jam* is produced on an Amiga 2000 using an inkjet printer, and represents state of the art as far as it can go without battallions of Apple Macs and legions of Linotron typesetters. I'd be interested to see a good magazine or fanzine produced on the ST.

Those interested in a peek at *Jam*, should write to Jam Computers at 2 Southbourne Road, Ward End, Birmingham B8 3NT. Send £2 for a sample copy.

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STARTING SAMPLING

After the recent Express round up of samplers, Maff Evans takes a look at Sound Express, an entry level system aimed as an introduction to the novice sampler.

Cross channel fading. Sample edit buffer switch. Auto-zero loop finder. Still with me? If not then you're probably not well versed in the world of digital sampling and sound editing. If this kind of thing seems both interesting and confusing, then you need to find a way to make yourself conversant with the basics of recording samples and editing waveforms before you can start producing your very own musical masterpieces.

Harlequin's Sound Express provides the novice sound enthusiast with a package that will allow them to produce reasonable quality samples and carry out simple sound editing via a simple series of operations. The hardware is a no-nonsense black box which plugs into the Amiga's parallel port. On the back of the unit are two phono-type plugs to allow you to attach a stereo sound source to the sampler. The software comes on a single disk and is based around a single editing screen.

All the operations are carried out by clicking on buttons which are clearly marked with icons or simple titles to describe their functions. Additional options can be called up by clicking on the THRU FX (which allows you to add effects such as reverb and echo to live sounds), EFFECTS (which allows similar manipulation of sample data) and EDIT (which contains all the cut, paste, delete, copy and other waveform editing tools).

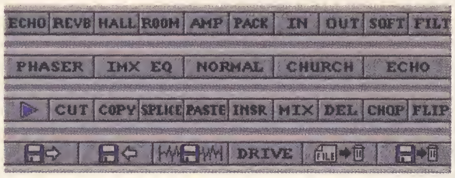
Sampling is started by clicking on the red record button and can be triggered either by pressing the mouse button a second time or setting the record trigger level, which will start recording as soon as a certain volume is reached. Once the sample is in memory, you can zoom in to use the edit functions on particular parts of the waveform or add effects and create loops. Once you have created a sound which is too your liking, you can then save it out to disk ready to use in your own programs or to load up in another music package.

DISORIENTED EXPRESS?

The initial record and playback rates on the Sound Express software are set up to 70. This gives the impression of high-quality recording. However the sample quality actually produced is not incredibly astounding, but for over 150 quid less than something like the superb Audio Engineer, a certain payoff is to be expected.

The editing software, on the other hand, is well presented and easy to use for the inexperienced user. Each function has its own clearly marked button to save confusion and all the operations are carried out on the area marked by two clear pointers so that weird, unexpected results don't occur on the wrong section of the waveform. Experienced samplers may find the average recording quality and limited edit facilities somewhat stifling and should brace themselves to part with a bigger wad of cash for a more professional product. But for those who wouldn't know a sample range marker or a zero-cross loop point if it came and clouted them across the back of the head with a Fairlight, Sound Express may provide the ideal way of getting to grips with Amiga sound sampling before moving onto a more expensive, high-end piece of equipment. It could save the exasperation of having bought a nice chunk of quality sound gear, only to be confounded by incomprehensible controls and befuddled by over-complicated techno-jargon. ■

Sound Express is available for all Amigas at £39.95. Contact IDG on 021-702 2323.



• *Some of Sound Express' sound processing options.*

CODEING
PAUL STARK
ROBERT SHETTLE
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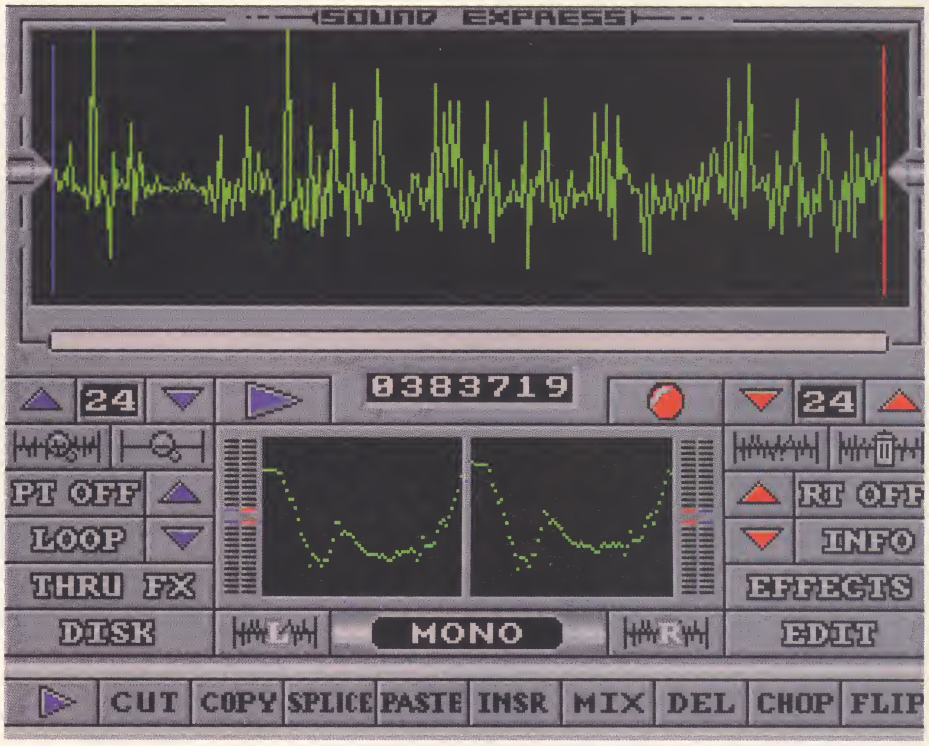
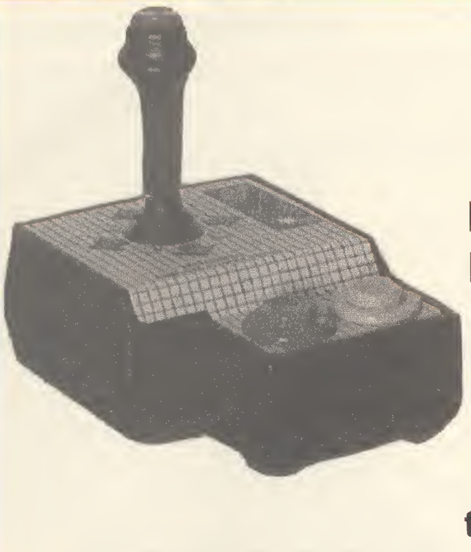
• *Sound Express: a sound introduction to sampling.*



• *The main editing screen showing the sample's waveform and the basic controls, all done with icons and the mouse.*



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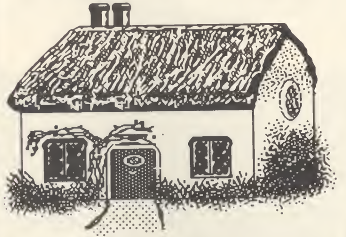

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COLOUR KEYS

SHARP Multi-Color 386

It costs as much as a car, and you need a car to shift it around, but Sharp's new portable has one thing going for it: high resolution colour.

The large brown case opened to reveal... an over-locking sewing machine. Whoops, wrong case, sorry mum. It was an easy enough mistake though. The Sharp PC-8041 portable has all the delicate grace of a Challenger tank.

Its large case doesn't conceal a weight guaranteed to send the sternest commando yomping back to Port Stanley, but then again if you can afford the £8,000-plus this desirable machine costs you won't be doing much walking carrying it.

It's a portable in the sense that it all folds up into one lump with a handle on it and can be carried, but it relies on mains power to keep its hungry LCD 14-inch colour screen lit and hard drive turning.

The Sharpis well specified: as well as the internal 3.5-inch 1.44Mb floppy and 40Mb hard disk, there are serial and parallel ports, a full-size expansion slot, a half card sized slot and all the necessary holes and connections to add extra drives, monitors, mice, modems and even synthesisers.

Unlike many portables, the Sharp has a vertical aspect *(I think that means it stands up – Ed)*. To prepare it for use, the keyboard (94 keys including keypad) is unclipped from the front and the large LCD screen folds out from vertical to a suitable preferred angle. The LCD display is 640 x 480 VGA with fluorescent tube backlighting.

And it's the screen which makes all the weight worthwhile – because it's colour. Colour LCD technology is still at a formative stage in its development, and there is still a long way to go, but the Sharp's screen is surprisingly good. Colour saturation and contrast are poor, but your eye soon becomes accustomed to the weak, pastel colours and sees the real ones instead. The refresh rate is tolerable, but mouse work is not easy as the pointer disappears during rapid movements. This slight blurring of moving images is a positive advantage for games though – previously jerky scrolling racing games became as smooth as silk!

The 14-inch display is usable in most lighting conditions although the angle of the screen has to be adjusted for optimum viewing. It can display 16 colours in high resolution mode or 265 in 320 x 200.

The PC-8081 is a powerful 20MHz 386 machine with 2Mb of RAM, expandable to 8Mb. On their own these features would be excellent but with a colour VGA LCD screen they are nothing short of computerised luxury.

There are no compromises in the design, and this portable can blow away some of its desktop competitors. Even the hard drive has a very respectable 19ms access time.

Lovers of environmentally friendly products will applaud the radiation-free screen. Someone who needs a power PC that can easily be moved from location to location will find all the features that they need and then some. The cost for this desirable heavyweight? £8,044.25 including the government's cut. ■

SPECIFICATIONS

Display	14-inch colour VGA LCD with backlight
Processor	20MHz 386
RAM	2Mb expandable to 8Mb
Floppy drive	3.5-inch 1.44Mb
Hard Drive	40Mb (19ms access)
Keyboard	93/94 key including numeric keypad
Expansion	16-bit AT slots for a full and a half card
Ports	1 centronics, 1 RS232C, 1 mouse, 1 keyboard, CRT analogue monitor, external 5.25-inch floppy
Weight	22lb
Price	£8,044.25 from Sharp on 061-205 2333

TCB TRACKER

TRACKER

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The -TCB TRACKER- uses special techniques to replay all 4 channels simultaneously at 10KHz to give crystal clear sound. Not only is the music clear, but it is also very loud. Music that is this clear and loud isn't normally achieved without using all the computers processor time. The -TCB TRACKER- will only use a maximum of 28% leaving plenty of time for the computer to do other things. This makes the -TCB TRACKER- perfect demo writers, professional programmers and for the person who just wants an easy to use music program.

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If you own a MIDI keyboard, then using it with the -TCB TRACKER- is no problem. Simply select a channel, go to MIDI mode, press record and then start playing. The - TCB TRACKER- uses MIDI CLOCK for perfect timing.

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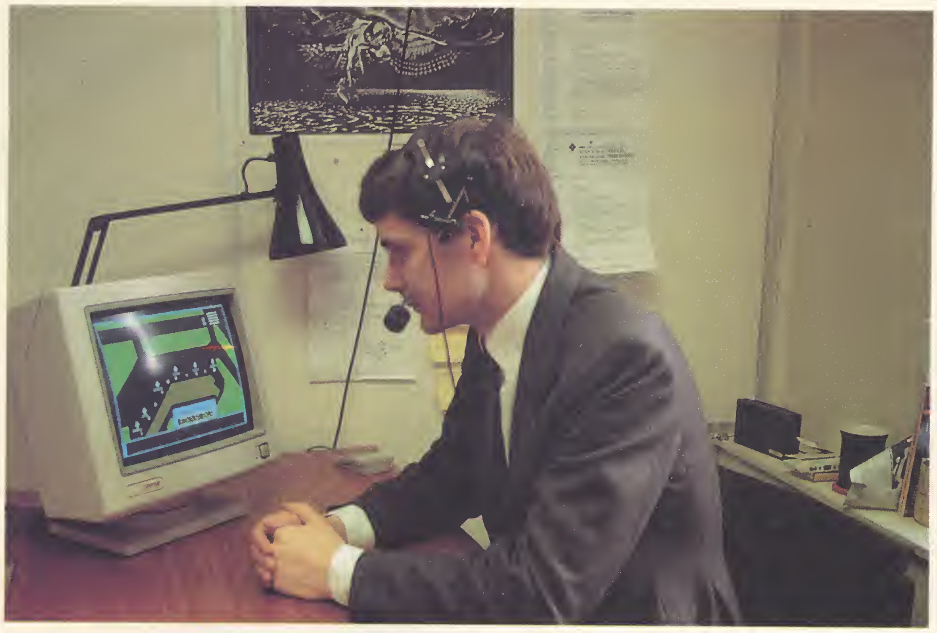
FROM HAND TO MOUTH

Since the first science fiction writer put pen to paper, people have been imagining men communicating directly with machines; talking to them, asking them questions, giving them commands by voice alone.

To a large extent that is still a dream, but the beginnings of a new means of communicating with computers is beginning to emerge.

Using current technology it is perfectly possible to give a computer instructions simply by saying them out loud. You can even direct the machine with a glance in the right direction. You can forego the keyboard and scribble your data on a notepad, or use a new generation of input devices to control objects in a three-dimensional manner. All these things can be done now to a greater or lesser extent, but they are all still experimental.

When these developments are in place we will finally be able to communicate with our computers in a human way, rather than a computerised way, and that will truly open up computing in a way that the inventors of the graphical user interface can barely have dreamt of. ➤



• *The Edinburgh speech recognition system Osprey in action. The set up uses four Transputers to handle the calculations.*

By far the most natural means of communication for a human being is speech; from the earliest age we learn to vocalise and most of us are far more fluent with the spoken word than we are with writing or typing.

Speech is the fastest mode of communication between humans which has been developed; a skilled typist may be able to manage 100 words per minute, but all but the most tongue-tied can easily speak at 200 words per minute or more.

There are grave difficulties involved in making a computer which can understand speech. Not least of these is the speed involved; a speech comprehending computer must be able to analyse what it hears in real time; as speech recognition is a computationally intensive feat at any time, truly powerful chips are required to do the work.

A comprehensive speech recognition system must have a number of features; it must work no matter who is speaking, it must be able to follow genuine continuous speech, have a good vocabulary and, perhaps most importantly, be able to interpret what has been said in terms of executable commands. Because of this huge power requirement all current speech recognition systems are limited in one respect or another.

To a speech recognition system, the same words spoken with different accents or even different inflections are interpreted as different words. Because of this, systems which can distinguish any speaker tend to have very mean vocabularies.

By compromising on other aspects it is posssible to have a general system which also has a large vocabulary. For instance a system marketed by Dragon Systems in Massachusetts claims to be able to recognize 25,000 words, with a further 5,000 which the user can add; however to work properly it requires that you pause in between each word.

A system developed at the Centre for Speech Technology in Edinburgh claims to have overcome most of these problems. It takes the alternative approach of not attempting to recognise whole words, but instead looking for phonemes – the sound building- blocks that go to make up the words. A second-level recognition system then assembles meaningful information from the phonemes. This is a more efficient way of doing it than tackling whole words, but the Osprey system (as it is called) still needs four parallel processing transputers wired in to a powerful PC to get the results.

There are a number of off-the-shelf speech recognition systems available, mainly for the PC. However as yet the application software is not really there to use them. The closest has been linking the systems to macro facilities, so that sequences of commands can be linked to a spoken word for instance, so you can say 'save' when using a word processor. But systems designed to use speech and sound from the ground up are thin on the ground.

> **Speech is the fastest mode of communication between humans which has been developed**

There may be a starting point in an interface for the Apple Macintosh, designed as an experiment by Apple itself. Called the Sonic Finder, it gives audible cues about what is going on, adding another dimension to the information the computer is giving you. There is as yet no speech link, but recognizing sound as a means of communicating information is a start. And the US firm Articulate Systems has come up with a voice-activated system which allows you to control the Mac's graphical user interface.

Uses of speech in computing are not limited to giving commands. Many leading industry figures will tell you that the 'next big thing' will be voice mail. Voice mail involves sending digitised speech over a computer network either annotated to a document or in its own right. The Next cube has voice mail capabilities built-in, and there are several, very expensive, PC expansion cards which allow you to use it.

More interesting is the *Freestyle* system developed by Wang, of word processor fame. This system allows you to record a commentary as a part of a document, which is combined with the on-screen graphics to create a little multimedia event, which can be sent over a network.

It is considerably easier for a computer to talk to you using speech synthesis, and many public domain systems exist, especially for the Amiga. The quality of the speech is not brilliant however, you can tell it is a computer and often it is necessary to alter the input text to produce the desired phonetic result.

It is still a useful technique; the Macintosh I am writing this on is set up to tell me of any networking difficulties it has by speaking to me – this is much more intrusive than a 'boing' and never fails to grab my attention, even if the synthesised American accent is risible.

After speech, the most common way we communicate is by writing with a pen and ink. More and more computers are appearing which use the electronic equivalent; people are happier with a pen than they are with a keyboard.

The keyboard is a singularly inefficient way of writing, or rather entering, text. It takes up a lot of space, contains many moving parts, does not allow you to simultaneously work and observe your work (unless you are a skilled touch-typist) and, worst of all, it is deliberately designed to slow down the writer.

Back in Victorian times when the first typewriters, and hence the first keyboards were put together, the mechanical operation of the machines was such that if the typist got up too good a speed the typewriter would simply jam. The keyboard was therefore designed with the most commonly used keys as far apart as possible to slow the typist down and let the machine work more smoothly. Unfortunately it has not proved possible to

HOW DOES SPEECH RECOGNITION WORK?

The first step in a speech recognition system is to digitise the sound using an analogue to digital converter, of the type found in most sound samplers.

Voice recognition requires a higher level of precision than most sound samplers however, and the digitising is done with 12-bit accuracy. The sampling rate varies from system to system between 6kHz and 20kHz.

The digital waveform that the digitising produces is far too complex to attempt to analyse directly; instead, mathematical techniques are used to distill the essence of the information from the raw data. Using filters and fast Fourier transforms, it is possible to reduce a second of speech to just 1K of data without loosing any significant information.

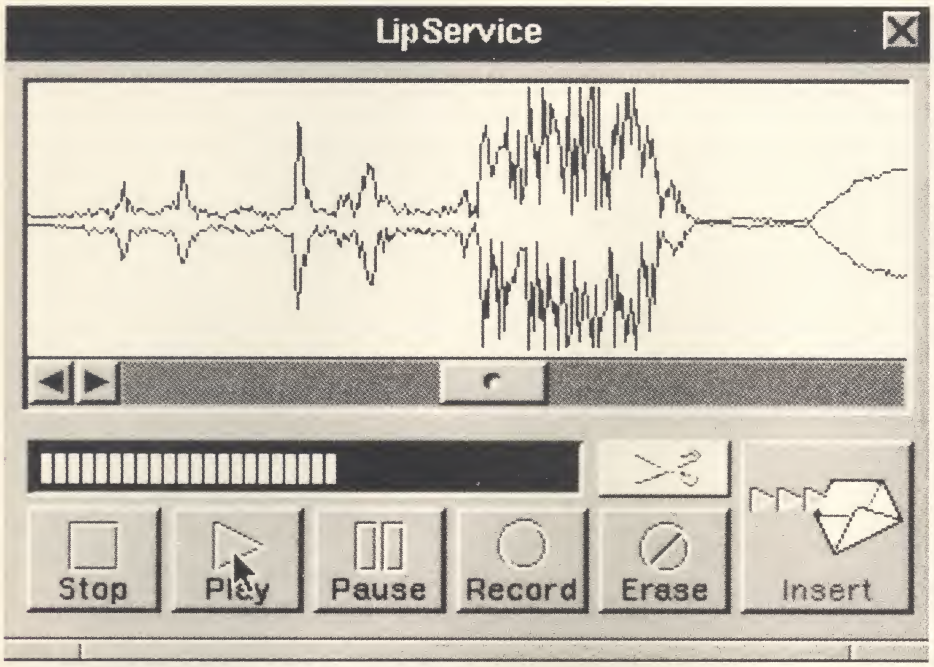
The next step is to compare these numerical representations of speech with ones the system knows. This can be done in a number of ways. One technique is to compare the numbers directly, by using algorithms which shift the data in time, looking for a match with a template. More sophisticated systems look at factors like the suration of the word and its position in the speech, and make an intelligent first guess at what it might be. This cuts down on wasted time considerably.

A third method is to use neural networks to learn the patterns of the speech; no working system at present uses this method.

Speech-recognition systems attempt to best-guess what the next part of the word or sentence is to cut down on processing time. Then comes the hard part; working out what was meant. With very limited vocabulary and a rigid syntax this is a problem on roughly the same level as an adventure game's parser, and we all know how often they come back with "I don't know how to go east". On a broader level of normal speech comprehension the problem is, with existing technology and software expertise, insurmountable.

At present neither the technology nor the software is there to handle it.

After all, to make a computer which can interpret all human speech is not very far away from an intelligent computer; a living computer.



• *The NeXT computer incorporates the facility to record and play voice messages, and to append them to documents.*

move people on to more efficient key layouts, even though it would help them considerably; we are creatures of habit and no-one wants to relearn how to type.

It is not this which has prompted most handwriting input systems however, but the vast amount of space the keyboard takes up. To make a truly pocket computer it is necessary to make the keyboard so small that it is unworkable. However the time honoured notebook and pencil metaphor is ideal. Thus it is notebooks which have made strides towards written input.

These systems strive to be as much like conventional pen and paper as possible. That means developing a system which is both an input system and a display device.

Such systems have existed for many years for desktop computers. Touchscreens use a grid of light beams and light sensors arrayed over the surface of an ordinary cathode ray tube. If you touch the screen your finger breaks two beams of light; one from the top of the screen, one from the side. The light detectors allow the exact position you touched the screen to be pinpointed.

More precise are lightpens. These contain a light detector in the tip which is connected to the computer. When a CRT screen draws its image it does so by scanning a beam of electrons over the screen starting at the top right and ending up bottom left. Where the beam hits the screen it causes it to glow, giving the picture. Each complete scan takes about a fiftieth of a second, too short a time to see the motion. The lightpen detects the light coming from the electron beam as it passes its tip. By timing this precisely it is possible for the computer to work out exactly how far through the scan the pen picked up the light, and therefore its position on the screen.

Neither of these systems are suitable for true pen-and-paper writing. The touch screen's resolution is far too coarse for one thing. And a cathode ray tube is hardly pocket material. Worse, the screen is not flat (ever tried writing on a curved surface?) and, as the image is created on the other side of the glass, you get parallax errors in the way you write which are most distracting.

A handwriting system therefore requires three elements; a display system, an input system, and a way of understanding what has been written.

The display system is usually one of three devices; a standard liquid-crystal display, a gas plasma unit as used in some expensive portables, or an electro-luminescent screen, which provides excellent contrast as it is its own backlight. These are all pretty conventional pieces of kit.

The input system is also quite easy to arrange; pressure sensitive, electrical and even light-based systems have all been developed. The hard part is understanding what has been written.

You may have extremely neat handwriting; I do not, and the most sophisticated pattern recognition system available (that's you) would have extreme difficulty interpreting my scrawl.

Interpreting words when each letter is spelled out is difficult enough. Here at Future we have an optical character recognition system which can scan typewritten manuscripts and convert them into word processor documents. At least, that's the theory.

In practice a slightly faded ribbon, grubby keys or even putting the paper in slightly off square can reduce the result to gibberish. Most OCR systems have to be trained as to what every single individual character looks like, and even then only manage a 90 per cent or so accuracy rate. Combined with a spelling checker that's good enough for our purposes, but imagine the same system trying to interpret straggly irregular and inconsistent handwriting. It wouldn't stand a chance.

Reading handwriting then is something that only humans can do really well, so researchers trying to ➤

• *The GRiDPad was the first laptop to offer handwriting recognition facilites.*

THE ACTIVE BOOK

A British attempt to build a computer which uses a stylus and screen with handwritten input is under way in Cambridge.

The Active Book is being put together by Herman Hauser who was one of the founders of Acorn. That link still shows – the Active Book will get the huge processing power it needs for handwriting recognition and the other tasks it aims to perform by using Acorn's ARM chip, the same RISC chip which drives the Archimedes.

A well as a stylus the Active Book features a touch sensitive device which allows you to literally thumb through the pages stored in it.

The Active Book will aim to combine the functions of a personal organiser, calculator and personal computer in a tiny package, which thereby becomes much more than the sum of its parts. In addition the Active Book will have more radical features such as direct e-mail, fax link up, voice recording, picture recording and even wireless networking.

The Active Book uses the book metaphor throughout. The pages you write on form chapters, there is a contents page, a title page and an index.

Hauser has high hopes for the machine, which he describes as the fourth wave of computers, the others being the mainframe, the minicomputer and the personal computer. We will get to see for ourselves in February, when the machine is officially unveiled.

• *The Nintendo Powerglove is a primitive 3D input device.*

build handwriting systems are using techniques which mirror the way we work – neural networks.

Neural networking is an attempt to bridge the gap between the conventional computer's sequential logical way of working and a persons more intuitive, hunch-based approach. A neural network, if properly set up, can 'learn'; it can take a set of inputs and construct an output from them by synthesising and comparing them in a way a conventional system would find difficult if not impossible. Despite their name neural networks are not physically linked computers, they exist in software.

Neural networks are particularly good at recognizing patterns; that is you can set them up so that slightly different sets of inputs always end up with the same output as long as their degree of similarity is close enough. This pattern recognition combined with the learning ability, makes neural networking ideal for this kind of work.

Once the letters which make up the writing have been distinguished by the neural network, a parser is called into play to find out what you meant – was it an instruction, or data? The parser works in much the same way as the one in a text adventure; it compares the input to the vocabulary and syntax and understands and instructs the computer accordingly.

Several systems offer handwriting input and many more are promised. The first to actually ship was the GRiDPad from GRiD Technology. Although this system falls a long way short of complete handwriting input it does show the way things are moving, with a stylus controlling the LCD display. Other announced systems include the Active Book and the Macintosh Slate.

It's not just the keyboard which is being threatened by the advances in technology. Our old friend the mouse is beginning to look a little long in the tooth. The principle objection to the mouse is that people do not naturally use their hands in two dimensions, or with one tied behind their back.

If you want to manipulate a three-dimensional drawing, then a two-dimensional mouse is not at all efficient. Several 2D mouse movements are needed to give the effect of a single 3D one.

A three-dimensional input device is required. One approach to this is that of the Dataglove or the Dextrous Hand Manager. Both are worn over the hands like gloves, but they have different methods of determining where they are in space. The DataGlove uses fibre optic cable running down the fingers to determine the way they are flexed, and an electromagnetic device to locate the glove in space. The Dextrous Hand Manager uses physical detecters attached to each joint to pinch up the way the fingers are flexed. This is more accurate, but you can't just slip it on and off. A low budget version is the Nintendo Power Glove. This uses strain gauges to determine the flex of the fingers and ultrasonic sensors to get the absolute position of the glove. These devices have varying degrees of accuracy, but one thing they all share is ungainliness; it is difficult to imagine a graphic designer arriving at work removing their coat and donning gloves surgeon- style.

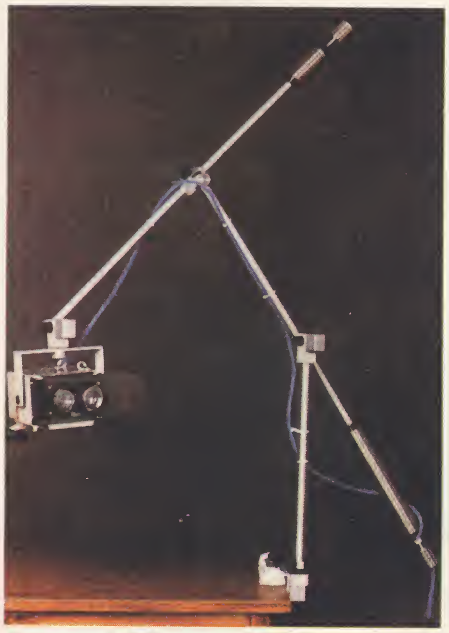
A much more likely system is under development at the Massachusetts Institute of Technology. This uses a device called a Polhemus Tracker – also used by the DataGlove – to keep track of two objects. The Tracker works by creating an oscillating electrical field in each of the perpendicular three planes. Coils in the devices pick up the electrical current generated by the fields. As electro-magnetic signals are sent in each of the three planes in turn, analysis of the strength and timing of the current coming from the coils provides not only location information, but also orientation information.

The two objects the Tracker follows can be thought of as the sculpture and the chisel. One is mapped to the object which is being created; a three dimensional drawing, say. The other is the tool you are using on it, say a paintbrush. Using this system when you have painted one side you don't need to use the keyboard or mouse to control icons to move the object, you simply twist it in your hand to reveal the other side and carry on painting. Of course the tool on your hand need not be as mundane as a paint brush; it can be anything the software can devise.

It is difficult to imagine a graphic designer arriving at work removing their coat and donning gloves

This kind of input device will change computer art forever, by giving the artist back their hands-on skills. The alternatives to the keyboard will change all of computing. Given the right software the next generation of input devices will enable a truly easy-to-use computer to be built which will finally involve the majority of the population. And about time too. ■

NEW METHODS ARE VIRTUALLY HERE



• *The trouble with virtual reality is that it is such a pain to get in to – not so with this set up from NASA, you just look through the binoculars.*

There are other ways to communicate with a computer of course, some of which still sound like science fiction, and others which enter the world of cyberspace.

An American firm in Virginia is developing a system which allows you to move the cursor to anywhere on the screen just by looking at the right place. The device uses a video camera to observe the eye and track the position of the pupil. Using this information the computer can work out where you were looking.

Other firms are working on mice which can detect how hard you are pressing the button, enabling you to control the thickness of a line precisely.

An already existing technology uses MIDI instruments for direct input – strum a letter anyone?

Cyberspace research has come up with some very sophisticated 3D interfaces, but they are totally impractical for real use; the operator must be able to break off for ten minutes for a coffee without having to remove a suit. A move towards this has been made by NASA which has put together a device which looks like a pair of binoculars on a flexible microphone stand. Sensors in the joints of the stand detect its position and orientation and the computer projects the appropriate view to the binoculars. Looking through them and moving about apparently comes close to the illusion of being inside a computerised world which you get from a body suit.

• *Eventually you may only need to look at the screen to give a command. This American system tracks your eye by observing the pupil with a video camera. It is only a small step to imagine 'double-blinking' on a file to open it, or dragging a document across the screen by squinting. The system is entirely non-obtrusive.*

THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created … affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

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AVAILABLE: JUNE 90

To put the ABC even further ahead of the competition, we have introduced a special 'Turbo' version, which includes a super fast RLL hard disk controller to increase the data transfer rate from 150KBytes/s to 800KBytes/s, with a performance index of 4.801. Plus! to provide exceptional graphics with an outstanding colour resolution of up to 1024×768, we have included a Super VGA graphics adaptor and a 14″ VGA colour monitor (which also supports 1024×768 resolution), all for an additional price of only £300. Check the ABC Turbo against the competition, at only £1299 (+VAT) with 30Mb hard disk, Super VGA colour graphics capabilities, plus 12 months on-site maintenance, it offers unbeatable value.

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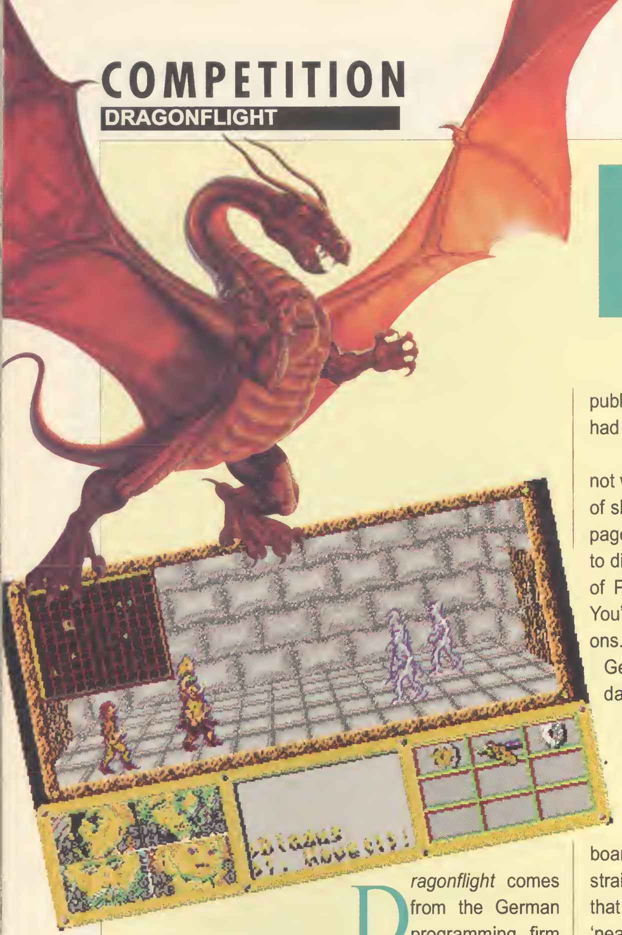
WIN! Dragonflight



Dragonflight comes from the German programming firm Thalion – that's German for... Thalion. This time, I don't really mind giving a copy of this game away – I've already got one for my Amiga and another for my ST, so there you go, relief.

The game is one of those huge, rolling, epic, vast, sweeping, big... where's me thesaurus? Ahh there we go, look under huge.. thumbity thumb, all it says in the *RoncTel Shorter English Thesaurus* under huge is: "Bigger than big" – you get the idea. Heads roll, skeletons fall to bits, fireballs spit, brains are used, maps are read, rings of Statis are generally flipped around the place. Yes it's an RPG (role playing game) in which you get the chance to become a fighter, maybe a dwarvish fighter, possibly a wizard, and if you're feeling real kinky, you get to be an elven all-rounder.

You are surrounded by places and people the names of which only sound correct when being slurred following a barrel of finest Rhenish wine, I know, I tried. Put your tongues around these for a minute while sober, and then try when inebriated (New Computer Express *would like to assure readers that we do not, in any way, support alcohol absise, abist, abooozem hic... abuse hic... – Ed.)* Brindil-Bun (a place), Dobranur (a dwarvish geezer), Port Pylon (so good they named it...), Riddle-tongues (mean parent-appreciators who are are doomed to spend their lives in walls), and Gnolls (trolls with attitude). I could go on but the editor has just comes back from a business lunch with the publisher and they both get aggressive once they've had one sniff of the barmaid's apron.

So, what's the point of the whole thing? Well, it's not what you'd expect; instead of beating seven shades of shot (there is one deliberate spelling mistake on this page. Can you spot it?) out of everyone else, you have to discover the old magic in order to help the University of Pegana set up a faculty of magic. Caring isn't it. You've also got to find out what happened to the dragons. I tell you, times have changed so much that St George would be classified as an environmental vandal nowadays, the poor old lag.

Not only are there ten games for the Amiga, there are also ten for the ST. If you run-up, there are 25 *Dragonflight* enamel badges to be had, in the words of my little cousin Doug: "They're neato!". Sadly we had to lock little Doug in a small cupboard under the stairs, with rats for company and only strained cabbage water for sustenance, until he learnt that we are NOT in America, where things are, hemm, 'neato' (or needo has he pronounced it). No, things are 'Crackingly spiffo whizz' on this page. By the way, Doug is 42 years old but only 22 inches tall.

How do you get to win this peerless prize? Simple, answer the three easy questions below, fill in the form, don't forget to include your chest size in case you win the badge, and send the whole lot to: *Dragonflight* Compo, *New Computer Express*, 30 Monmouth Street, Bath, Avon BA1 2BW to reach us by October 22.

Now, heeeeeeere's the man with the questions... Compo Man:

Good day ladies and gers. The questions are:

1) If one were to be in DRAG ON stage one would be dressed as:

A) A small fluffy tangerine
B) A person of the opposite sex
C) A 19th Century guards officer from Stevenage

2) *The Flight of the Bumble Bee* was written by

A) P D James
B) Rimsky Korsakov
C) Algernon Montmerency-Digby-Smalls

3) Where did Puff the Magic Dragon live

A) Near Camelot
B) By the A33
C) By the sea

There, easy isn't it? Some smart Alecs think it's too easy so here's a supplementary question which won't affect the draw but might win a prize. What are the names of the two programmers in the Thalion team? ■

Name ....
Address ....
....
....

Machine: **Amiga** ☐ **ST** ☐
Answers 1) .... **2)** .... **3)** ....

Supplementary ....

Answers on exotic postcards are coming in thick and fast. Read the Centrefold for a list of those people who bothered.

PLUS

THALION

25 ENAMEL BADGES RUNNERS UP PRIZES

WINNERS

The *Atomix* competition attracted innumerable people, and here are the lucky winners. And yes we do know that by the time you read last week's Stop Press about this comp, it was already out of date. Sorry, OK?

M S Starling, Eastbourne, East Sussex; A Hall, Eastbourne, East Sussex (spooky coincidence innit?) Peter Worth, Shoreham-on-Sea, West Sussex (not so spooky); R Solomon, Chiswick, London (not strange at all); M Beevers, Castleford, West Yorks ('appen) Tristan Allsop, Wimbledon, London (15 love to you); R E Merrison, Mortimer, Berks (then Mortimer should see a vet); S Lee, Ramsey, Cambs (is Bruce a relation?); R Leonard, Macclesfield, Cheshire (a Macc Lad yet); G Reywer, Gorse Covert, Warrington (no one here has been there); T Jelves, Countesthorpe, Leicester (Shilts has been there); B Sharkey, Newton Aycliffe, Co Durham (how's yer machine?); P J Halpin, Thurrock, Essex (why isn't Thurrock in Scotland?); D Rule, Southall, Middx (a damned good cricket team there); W McNeice, Conlig, Co Down (any relation to Louis?); A Dugdall, Withernsea, Humberside (mmm, Grimsby my stop); K Crabbe, Widcombe, Bath (we're coming to git ya); D Standford, Belper, Derbyshire (sounds like a job for Andrews); R Hannaford, Barnstaple, N Devon (change at Exeter); R Peters, Ipswich, Suffolk (remember Kevin Beatie?); M Fenton, Ipswich, Suffolk (yet spookier still); P Esney, Llanelli, Dyfed (he made it Esney on himself); P Magee, Warlingham, Surrey (who's surrey now?)

The runners-up
L O'Hara, E Morgan, B Mooney, K J Sandwell, R J Kirby, R Robson, M Smith, J Campey, R James, A Wilkinson, L G Caldwell, A J Northcott.

SPECIAL NOTICE

A technical cock-up involving an out of date calendar, a sacked competitions editor and the Powercade prize lead people to think that the finishing date for this massive prize was Monday September 17. It is, in fact, Monday October 1. So keep sending those entries in.

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BATMAN PACK
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The Commodore A500 Batman Pack must surely rank as one of the most popular computer packs ever! The pack features the **Commodore Amiga 500 computer** with **mouse controller** and **TV modulator**, plus four top software titles. The software includes: **'Batman The Movie'** - Rid Gotham City of the cunning joker, in Ocean's top selling title based on the blockbuster Batman film; **New Zealand Story** - high quality conversion of the leading arcade game; **Interceptor** - Dogfight with two F-16's in this leading flight simulator; **Deluxe Paint II** - top quality Amiga graphics package which set the standard for others to follow. Return the coupon for further details.

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For the more serious or professional applications user, Commodore have a selection of systems based around the expandable Amiga 2000, at prices from £1295+VAT. The A2000 features a full 1Mb RAM (expandable to 9Mb), 9 system expansion slots, plus IBM compatibility with the use of PC-XT or PC-AT bridgeboards. Complete and return the coupon, putting a tick in the A2000 box, for details of A2000 computer systems.

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